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IN THIS ISSUE

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LETTERS

Doryl Subcutaneous Preferred

DEAR SIRS: It has been brought to our attention that in the November-December issue of THE BULLETIN, in an article entitled "Routes of Administration for Parenteral Drugs", intramuscular use of Doryl was recommended. We are writing to point out that we do not recommend such use of Doryl.

Despite the fact that certain authors may recommend the intramuscular use of Doryl, we feel that because the drug is so powerful, intramuscular use is contraindicated. Of course it is fully agreed that this drug should never be used intravenously. It is true that intramuscular injection does not constitute injection directly into the blood stream; nevertheless, it provides far more rapid absorption than does subcutaneous injection. Furthermore, inadvertent intravenous injection is possible when giving a drug intramuscularly but this almost never occurs when subcutaneous injection is intended. Considering the potency of Doryl it is our conviction that all precautions should be taken when it is injected and that only the subcutaneous route is advisable.

We would very much appreciate it if this comment could be drawn to the attention of your readers.

AUGUSTUS GIBSON, M.D., *Medical Director*
Medical Division
Merck & Co., Inc.
Rahway, N. J.

Interested in Affiliation

DEAR SIRS: The Rhode Island Society of Hospital Pharmacists is interested in becoming affiliated with the national SOCIETY. However, before we officially apply for a charter, we would like further information. I would like to present this information at our next meeting on March 11 so if you could oblige before that time, it would be appreciated.

ROBERT J. DAIGLE, *President*
Rhode Island Society of Hospital Pharmacists
Rhode Island State Sanatorium
Wallum Lake, R. I.

Requests for Literature

DEAR SIRS: We are in the process of improving the operation and services of our pharmacy and have been referred to your office as an excellent source for suggestions. Could you send copies of the *Minimum Standard for Pharmacies in Hospitals,* the *Suggested Floor Plans for Hospital Pharmacies,* and the *Comprehensive Bibliography.*

MARTIN GREIF, *Pharmacy Officer*
U. S. Army Hospital
Fort Eustis, Va.

DEAR SIRS: Reading in the last number of *Tile and Till,* I note that you have available for distribution copies of the *Minimum Standard for Pharmacies in Hospitals,* the *Suggested Plans for Hospital Pharmacies,* and related subjects.

JOHN D. A. HOGAN, *Pharmacist*
Houston, Texas

DEAR SIRS: We are quite anxious to get a copy of the *Minimum Standard for Pharmacies in Hospitals* . . . In fact, we are interested in whatever literature you have available on establishing a hospital pharmacy. . . .

MAGARET SCHLOEMER, *Superintendent*
Lakeland Hospital
Elkhorn, Wisconsin

Appreciate Services

DEAR SIRS: The three formularies which we borrowed are being returned today. We sincerely voice our thanks for the use of these references books. It gives us a good start in the right direction. Thank you.

THOMAS W. WINSLEY, *Pharmacist*
Good Samaritan Hospital
Zanesville, Ohio

DEAR SIRS: I am in the process of initiating a Formulary or a Drug List at Marymount Hospital. It is my understanding that your institution has a department in which various formularies are filed and which are available on a loan basis. I would appreciate having several on loan.

I would also like to have available information on preparing procedures for the pharmacy department. Marymount Hospital has a capacity of 230 beds.

Your assistance will be immensely appreciated.

SISTER MARY JUVENTIA, *Pharmacist*
Marmount Hospital
Garfield Heights, Ohio

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EDITORIAL

Investigational Drugs and the Hospital Pharmacist

by DON E. FRANCKE

One of the weak links in the chain of precautions for patient safety in hospitals is the manner of handling investigational drugs. These drugs are obtained by the principal investigator who, with few exceptions, takes them to the hospital nursing unit where they are administered to patients by members of the nursing staff upon written order. The drugs may be prescribed by the principal investigator or the patient's order may be written by another member of the medical staff at his request.

From this point on difficulties arise, principally due to a lack of communication. The nurse in many cases does not know what drug she is administering because it is labeled with a code number, and sometimes even the strength of the drug is not indicated. Neither does she know the various dosage forms in which the drug is available.* This leads to confusion and greater possibility of error. But most important, the nurse is not advised of the actions, uses, precautions, and side effects of the drug and thus cannot carry out her professional function of noting the patient's response to the medication. Therefore, the patient loses this important protection and if, for any reason, he responds unfavorably to the drug, corrective measures may be delayed.

Steps may be taken through the Pharmacy and Therapeutics Committee to improve the handling of investigational drugs for greater patient safety. The hospital pharmacist in his role as permanent Secretary of the Committee is an important factor in the resolution of this and other problems relating to the use of drugs in hospitals. As a matter of general interest to hospital pharmacists we are quoting excerpts from the minutes of one Pharmacy and Therapeutics Committee which acted on this problem:

. . . It was pointed out that as long ago as 1948 the Medical Advisory Staff had approved a rule that all investigational drugs be listed with the Pharmacy and Therapeutics Committee in order that some central clearing place for information on these drugs would be established and so that summaries of the drugs could be prepared for the nursing staff. However, the rule has never worked in practice because physicians using investigational drugs took them directly to the floors where they were administered by the nurses. It was pointed out that the only way to insure that the Pharmacy and Therapeutics Committee would get the information so that summaries could be prepared was to prohibit nurses giving investigational drugs until such time as proper information was available on the nursing units.

After some further discussion the following resolution which incorporates proposed rules regarding investigational drugs was offered:

WHEREAS the administration of investigational drugs by nurses without proper knowledge of their actions, uses, dosage, toxicity, and precautions is fraught with danger to the patient; and

WHEREAS it is not in conformity with good nursing practice to administer drugs without a proper knowledge of the basic information concerning them; and

WHEREAS the above mentioned basic information is not now readily available to members of the nursing staff; and

WHEREAS, in order to provide a central source of information on investigational drugs used in the Hospital, the Medical Advisory Staff has stated that "Drugs for investigational use must be recorded with the Secretary of the Pharmacy and Therapeutics Committee by the investigator before they may be used in the Hospital. . .

Therefore be it

RESOLVED that the Pharmacy and Therapeutics Committee approve the following rules:

1. The administration of investigational drugs by any route by members of the nursing staff is prohibited until such time as adequate information concerning the actions, uses, dosage, toxicity, and precautions of such drugs is available on the individual nursing units in a form approved by the Pharmacy and Therapeutics Committee.

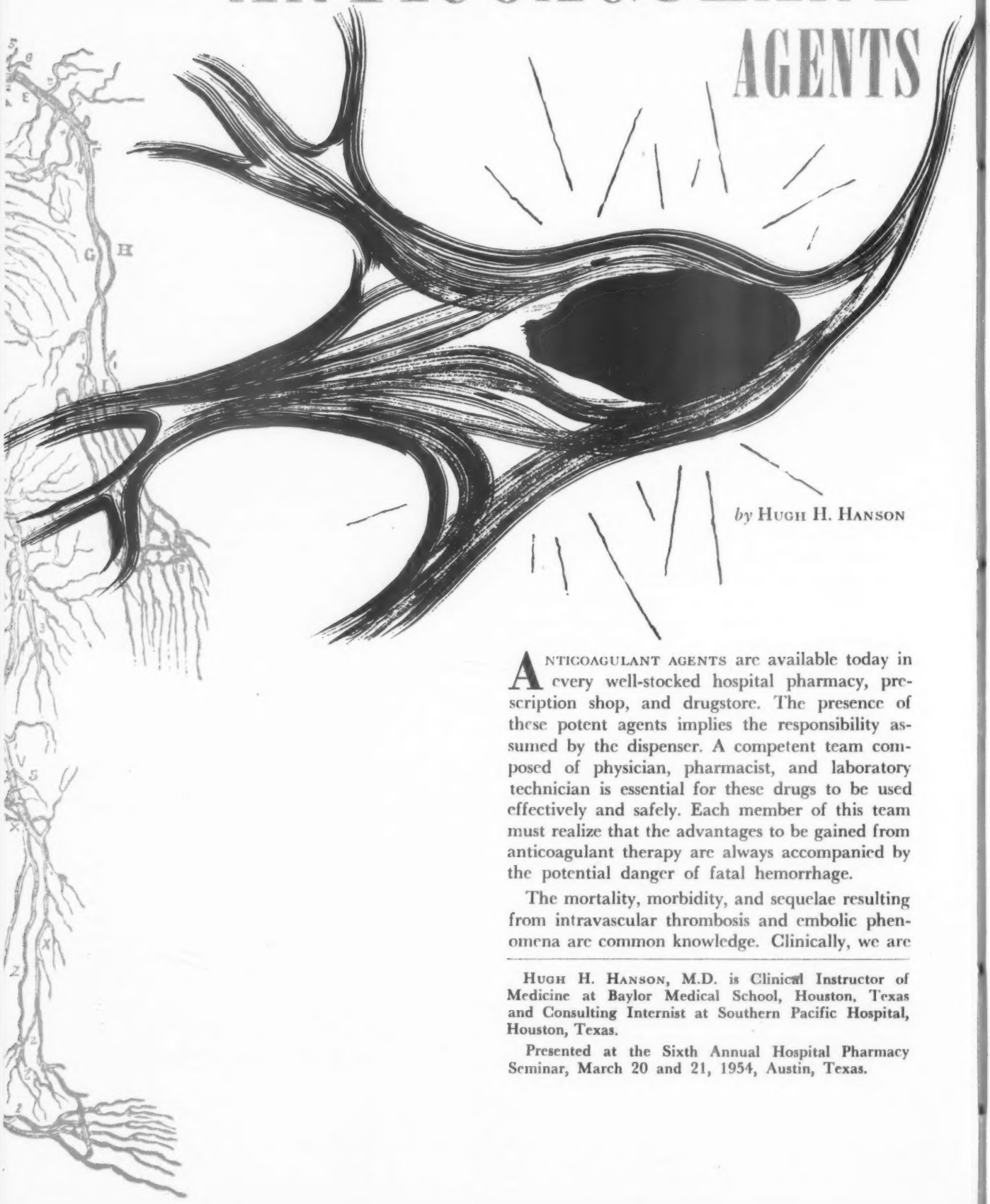
2. It shall be the responsibility of the chief investigator using the investigational drug to furnish to the Secretary of the Pharmacy and Therapeutics Committee (the Chief Pharmacist) pertinent information on the drug to be administered in the Hospital.

3. It shall be the responsibility of the Pharmacy Department to prepare and to make available to the Nursing Department summaries of this basic information on investigational drugs.

. . . The question of what constitutes an investigational drug was discussed. It was decided that as far as the Hospital is concerned an investigational drug should be defined as "any drug which has not been released either by the Food and Drug Administration or by the Pharmacy and Therapeutics Committee". This would mean that as soon as information on any drug was available on the nursing units, the nurses could administer it whether it was a new investigational drug or an established drug which was new to this Hospital.

It was agreed that the Pharmacy would start at once in preparing summaries of all accepted drugs for which there is not now information on the nursing units, and would make these summaries available in mimeographed form. It was also pointed out that the Formulary would be available in August and that this would then establish a baseline of drug information which could be readily kept up to date by the issuance of supplementary material. . . A further point which was discussed was the advisability of having all investigational drugs dispensed through the Pharmacy . . . and that this procedure would tie in with the responsibility of the Pharmacy to prepare summaries of information on these drugs.

ANTICOAGULANT AGENTS



by HUGH H. HANSON

ANTICOAGULANT AGENTS are available today in every well-stocked hospital pharmacy, prescription shop, and drugstore. The presence of these potent agents implies the responsibility assumed by the dispenser. A competent team composed of physician, pharmacist, and laboratory technician is essential for these drugs to be used effectively and safely. Each member of this team must realize that the advantages to be gained from anticoagulant therapy are always accompanied by the potential danger of fatal hemorrhage.

The mortality, morbidity, and sequelae resulting from intravascular thrombosis and embolic phenomena are common knowledge. Clinically, we are

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HUGH H. HANSON, M.D. is Clinical Instructor of Medicine at Baylor Medical School, Houston, Texas and Consulting Internist at Southern Pacific Hospital, Houston, Texas.

Presented at the Sixth Annual Hospital Pharmacy Seminar, March 20 and 21, 1954, Austin, Texas.

largely concerned with venous thrombosis in the legs and pelvis and mural thrombi in the heart. These sites give origin to the devastating emboli which are destined to reach the lungs, brain, abdomen and limbs.

Intensive anticoagulant therapy offers the best chance of preventing these complications. The magnitude of this problem is better appreciated when it is realized that thrombi have been demonstrated at autopsy in the deep leg veins of 50 percent of all patients who had been confined to bed.[3]

Anticoagulant Agents

In evaluating anticoagulant agents we are concerned with their safety, efficiency, economy, and practicability. Physiologically the anticoagulants may be divided into two distinct groups—(1) plasma antagonists which act directly in the plasma as antithrombin and antiprothrombin (heparin group), and (2) hepatic inhibitors which act directly on the liver suppressing formation of the prothrombin complex (Dicumarol group and certain indanediones).

Therapy with the plasma antagonists must be guided by determinations of the coagulation time, an optimal therapeutic range being a coagulation time about two and one half times normal. These agents produce a coagulation defect immediately. Heparin is the most widely used agent of this group. Satisfactory methods of administration are shown in Table I. The major disadvantages of this group are (1) their cost, and (2) the necessity of parenteral administration. Intramuscular and subcutaneous administration of heparin is rather frequently attended by hematomas and pain at the site of injection. Continuous intravenous heparin is largely used following vascular surgery.

Therapy with the hepatic inhibitors must be guided by determinations of the prothrombin time, an optimal therapeutic range being a prothrombin activity of 30 to 10 percent of normal. Dicumarol (bishydroxycoumarin) is the most widely used agent of this group. Satisfactory schemes of administration are shown in Table II. The major disadvantage of this group is the necessity of performing frequent prothrombin time determinations. During the induction of hypoprothrombinemia daily prothrombin time determinations are essential. Subsequently, they may be done less frequently and during long term anticoagulant therapy may be performed once or twice a week. Heparin may be combined with the coumarins to advantage during the induction of therapeutic hypoprothrombinemia, and during periods of suboptimal hypoprothrombinemia which occur in coumarin therapy.

Anticoagulant Antagonist

The antagonist of choice for heparin and the heparin-like agents is protamine sulfate. This should be administered intravenously in doses of 50 to 100 mg. It rapidly counteracts the anticoagulant effect of these agents.

The antagonist of choice for the coumarin compounds is Vitamin K_1 or K_1 oxide. For minor hemorrhage and situations which are not serious the hypoprothrombinemia can be brought to within a safe range in 12-24 hours by giving 50 to 100 mg. of either antagonist orally. In the face of serious emergencies 100 to 500 mg. of either antagonist should be administered intravenously and this will usually return the hypoprothrombinemia to a safe level within 6 to 12 hours.

Menadione sodium bisulfite may be used in 72 mg. doses given intravenously to return an excessively prolonged prothrombin time to within the therapeutic range.

Discussion

Anticoagulant therapy is contraindicated in the presence of severe hypoprothrombinemia, renal insufficiency, hepatic insufficiency, a hemorrhagic diathesis, and potential bleeding lesions.

The greatest complication of anticoagulant therapy is that of hemorrhage and this has an incidence of 0.5 to 3 percent. Minor hemorrhage (hematuria, hemoptysis, etc.) may be ignored. When severe hemorrhage occurs immediate aggressive treatment is mandatory using transfusions, antagonists, and other measures as indicated in the treatment of any hemorrhage.

Anticoagulant therapy is indicated in the following conditions: (1) embolism resulting from intravascular thrombi; (2) intravascular thrombosis; and (3) prophylactically following certain surgical procedures, acute myocardial infarction, congestive heart failure, etc. The rationale for anticoagulants immediately following acute thrombosis is to prevent extension of the thrombus which may result in embolism or occlusion of essential collateral vessels and to prevent the formation of other thrombi. Anticoagulant therapy should be instituted in all cases of acute thrombophlebitis and non-fatal pulmonary embolism. Adequate anticoagulant therapy will reduce significantly the morbidity and mortality resulting from the thromboembolic phenomena which are associated with acute myocardial infarction[4] and congestive heart failure.[2] Long term anticoagulant therapy is indicated in patients with recurrent idiopathic thrombophlebitis, repeated cerebral or coronary thrombosis and mitral stenosis with embolization.

The most effective measure in the prevention of thromboembolic disease today is the prompt in-

TABLE I. ANTICOAGULANT AGENTS WHICH ACT AS ANTAGONISTS IN THE PLASMA

AGENT	DOSE
1. Heparin Sodium	(a) 100 mg. I. V. as initial dose; then 50-75 mg. I. V. every 4 hours. (b) 50 mg. I. M. every 6 hours. (c) Continous I. V. drip (200 mg. of heparin in 1000 cc of fluid) at about 20-25 drops per min. usually. (d) Depo-heparin 300-400 mg. I. M. or Subcutaneously initially, then 200-300 mg. daily.
2. Paritol*	5-10 mg./Kg. body weight every 8 hours I. V.
3. Treburon**	200 mg. every 4 hours I.V.

I. V. = Intravenously
I. M. = Intramuscularly

*Paritol (Wyeth) is polyanhydromannuronic acid (alginic acid) with one to two sulfate groups per C_6-unit. It is not commercially available.

**Treburon (Hoffmann-La Roche) is the polysulfate ester of polygalacturonic methyl glycoside methyl ester (derived from pectin). It is not commercially available.

stitution of adequate anticoagulant therapy. Its effectiveness has been established in experimental animals and from the statistical results of numerous clinical investigators. The greatest difficulty in anticoagulant therapy is that of clinical administration so that an adequate coagulation defect is induced and maintained without producing serious hemorrhage. Familiarity with these agents during the past decade has increased our skill of administration, and the highly effective antagonists now available have greatly increased their safety.

The anticoagulant of choice is dictated by the situation and the familiarity of the clinician with the respective agents. Heparin and bishydroxycoumarin are the two agents most widely used. It is probable that if comparable degrees of therapeutic hypoprothrombinemia are established and maintained, Cumopyran (cyclocumarol), Tromexan (ethyl biscoumacetate), and Dicumarol (bishydroxycoumarin) will be equally effective in preventing thrombosis, and their use will be attended by the same small risk of bleeding.[1] Since vitamin K_1 is available for intravenous use, there is no appreciable safety factor in using the short acting coumarin compounds. Adequate laboratory tests are essential for carrying out effective anticoagulant therapy.

Antagonists should always be immediately available wherever anticoagulant therapy is practiced.

Summary

Anticoagulant therapy today is our greatest weapon against thromboembolic disease. Frequent laboratory tests are essential in the early phases of therapy. The anticoagulant agents are all potentially dangerous drugs and should be dispensed only to persons under the constant supervision of a physician. It is the sole responsibility of the pharmacist who dispenses these drugs to keep immediately available the antagonist of choice for each anticoagulant agent.

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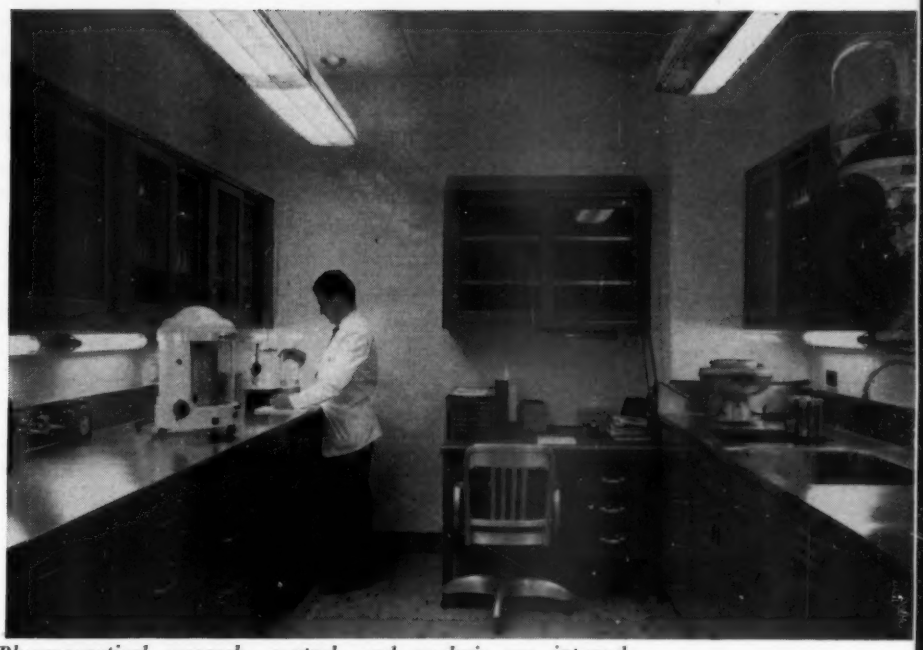
TABLE II. ANTICOAGULANT AGENTS WHICH ACT AS HEPATIC INHIBITORS.

AGENT	DOSAGE SCHEDULE		
	1st Day	2nd Day	Thereafter daily
1. Bishydroxycoumarin (Dicumarol)	200-300 mg.	100-200 mg.	50-100 mg.
2. Cyclocumarol (Cumopyran)	100-150 mg.	25-75 mg.	0-75 mg.
3. Ethyl biscoumacetate (Tromexan)*	1200-1500 mg.	600-1200 mg.	300-600 mg.
4. Phenindione (Hedulin)*	200-300 mg.	50-100 mg.	50-100 mg.

*Dose should be split into two equal parts and half given in the morning and the other half given at night.

the hospital pharmacist and RESEARCH activities

by
JACK COOPER *and*
JACK LAZURUS



Pharmaceutical research, control, and analysis are integral functions of the Pharmacy Department at the National Institutes of Health Clinical Center, Bethesda, Md.

IT is highly probable that to most of us the name Beaujolais is more easily remembered than that of Claude Bernard.[1] Once tasted, the dry, slightly astringent, red wine of the French province of Beaujolais is not readily forgotten. One hundred and forty-one years ago in the village of Saint Julien in this quiet, hilly province, a child was born into a family of grape growers and named Claude Bernard. Like most farm boys of France at that time, Claude's education was primarily in the parochial schools of the area and there is little doubt that scientific subjects were taught.

In 1832, when Claude was a young man of 18, the pharmacist Louis Joseph Marie Millet took him on as an apprentice. The parents of the student pharmacist did not consider this decision as a tragedy since the proprietors of pharmacy shops in the towns and villages of France are the recipients of considerable local respect. The duties of an apprentice in a pharmacy are about the same the world over and young Claude swept the pavement in front of the store, brought the proprietor his hot soup and crusty bread for lunch, rinsed medicine bottles, and ran numerous errands. Slowly and carefully he was initiated into the art of preparing infusions, decoctions, pills, and powders. In later life he would startle his medical colleagues by arranging a neat fluting of paper around the cork of a medicine bottle, a minor but self-satisfying skill which I am sure most of us have lost.

As Claude's knowledge of pharmacy increased, he became more critical of its practices. His skepticism was not relieved when he learned how to prepare La Theriacque, a popular remedy with a long and very honorable pharmaceutical history. The left-overs of mixtures, the last drops of elixirs and syrups, the scrapings of containers and mortars, instead of being discarded were always saved to make La Theriacque. This remedy proved to be equally effective when made with left-overs or compounded freshly with its sixty traditional ingredients. The popularity of the prescription was attributed by cynics to the good wine and honey used as the vehicle. By 1834, Claude felt compelled to leave a life which he described as bounded by four walls and three hundred bottles.

Bidding farewell to his kindly mentor and the heavy mortars and pestles, the young ex-apprentice departed for the bright life of Paris with a three-act tragedy under his arm and hopeful of success as a playwright. A gentle professor of French poetry at the Sorbonne read the play and promptly advised Claude to study medicine. The moment the disappointed author accepted this advice and set foot in the laboratory of the famous Francois Magendie, his future was assured and science acquired one of its greatest minds.

Today, Claude Bernard is regarded as the founder of experimental medicine and his book "An Introduction to the Study of Experimental Medicine"[2] is a beacon light to all who wish to understand the art of research and the conditions and

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Presented at the Hospital Pharmacy Section of the New England Hospital Assembly, March 30, 1954.

scientist. This man spent his life in putting questions to nature and it is the questions which are the measure of his originality; he could not explain how they arose but he knew that they represented the only fertilizing factor in research. The experiment is undertaken because of a preconceived idea, planned on the basis of a working hypothesis, but the resulting observations are made without preconceived ideas. Such habits, says Claude Bernard, are difficult to acquire. "Man," he says, "is by nature proud and inclined to metaphysics. To be worthy of the name an experimenter must be at once theorist and practitioner. While he must completely master the art of establishing experimental facts which are material of science, he must also clearly understand the scientific principles which guide his reasoning through the varied experimental study of natural phenomena. We cannot separate these two things, head and hand. An able hand without a head to direct it is a blind tool. A head is powerless without its executive hand."

It is apparent from this dual nature of scientific activities that not only does the experimenter collect facts, but he tries to understand what makes the facts fit together. Any order which can be seen in a collection of facts is expressed as a hypothesis or theory. According to Sir Edward Appleton,[3] "A theory is only a hypothesis that has become respectable. But even then," continues the British radio-physicist, "there is nothing final about it. A theory is a policy rather than a creed." The dogmatic scientist is a man whose personality and work are at loggerheads. If he possesses enthusiasm for his ideas, all the better; but a healthy dose of skepticism will keep him out of blind alleys and deflated publications. Romantic notions may serve as a tonic in everyday social life, but in research they serve only to fog up the laboratory. The Hollywood version of scientific research provides light entertainment but its sugar coating cannot gloss over the requirements or frequent monotony of life in the laboratory.

Hospital Pharmacists and Research

Among the many facets engaging the interests and abilities of American hospital pharmacists today, original research appears to play a minor role. The reasons for this unfortunate situation are far from clear. Many educators and writers on pharmaceutical subjects have pointed out the opportunities which exist in hospital pharmacy for investigations leading to fruitful discoveries and the advancement of pharmaceutical science. The late Dr. Curt Wimmer[4] urged hospital pharmacists not to let the word "research" scare them. He felt that every pharmacist is capable of undertaking some phase of research and referred to publications by hospital pharmacists on such varied problems as bases for penicillin, burn remedies, and preservatives. F. M. Rudi[5] is of the opinion that, "Research in the hospital pharmacy gives the pharmacist an opportunity to apply his professional skill to the develoment of preparations of drugs which will meet the needs of the medical practitioner."

In an article published last month in the *Military Surgeon,* Vernon O. Trygstad[6] states emphatically that, "the hospital pharmacist is more than a trained technician. He has to be an able administrator; he is a teacher, training subordinate personnel and lecturing to or instructing nurses and doctors in subjects related to pharmacy. He is a researcher constantly looking for ways of improving products or developing new products or as an important member of the medical team, helping to find new approaches to unusual cases through drug therapy. Of course, he is a manufacturer, a compounder, and a dispensing pharmacist." After three cheers and a hallelujah for Mr. Trygstad's literary enthusiasm, it becomes necessary to reduce the daily dose of self-administered amphetamine and soberly estimate the real possibilities.

The first saddening conclusion that we can reach is that not all hospital pharmacists are or can be researchers. The possession of a license to practice pharmacy and the simultaneous blessing of hospital employment do not automatically lead to Stockholm, a red ribbon across the chest, and 35,000 dollars worth of Swedish kronen. Of course, it is possible to so dilute the definition of research that membership in the National Academy of Sciences would be awarded to the imaginative fellow who first substituted an onion for an olive in a Martini. The second factor to be swallowed with a grimace is that in spite of the opportunities undoubtedly existing in a good hospital, research activities do not develop of their own accord but must be conceived and organized. Thirdly, and often very difficult to achieve, the cooperation of other individuals in the hospital—chemists, bacteriologists, nurses, physicians, roentgenologists, pathologists, and others—must be obtained. The day of the individualistic starry-eyed researcher, brilliantly isolating an active aphrodisiac alkaloid from Union Oyster House clam chowder is probably gone forever.

Contributions by Hospital Pharmacists

To swing over to the positive side, many observers are of the opinion that important contributions to pharmaceutical science have recently been made by hospital pharmacists and it might be instructive to refer briefly to several of these. The name of Alexander Fleming is known to all as the dis-

coverer of penicillin but who here has heard of M. H. Payne,[7] Chief Pharmacist of St. Mary's Hospital in London? This hospital pharmacist tells us that in 1928 in a laboratory directly above his, a quiet, unassuming bacteriologist, Dr. Fleming, was wondering why the products of metabolism from a penicillium were inhibiting the growth of staphylococci on one of his culture plates. Fourteen years later, Mr. Payne was given a small vial of penicillin, the color gold and equally precious, with the request that he incorporate the substance in a suitable cream. The aqueous emulsion base developed at St. Mary's Hospital proved to be the first of a long series of preparations which brought Dr. Fleming's discovery to the place where it could do the most good, the tissues of the patient.

In 1951, J. W. Hadgraft[8] and his colleagues at the Royal Free Hospital in London published a paper describing a thorough and excellently organized study of the stability of solutions of crystalline penicillin, particularly under conditions of hospital use. Storage conditions included controlled refrigeration, pharmacy laboratories, and hospital wards. An additional aspect involved the determination of the effect of phenylmercuric nitrate when used as a bacteriostatic agent upon the stability of buffered penicillin solutions. This study also demonstrated the possibility of research collaboration between a hospital pharmacy and a pharmaceutical manufacturer in that the penicillin assays so important in reaching the correct conclusions were made by Glaxo Laboratories, Limited.

It is becoming increasingly apparent that pharmaceutical research is now guided primarily by developments in medicine or in the fundamental physical and biological sciences such as chemistry, microbiology, endocrinology, and physics. Advances in the sciences allied to medicine act as stimuli to pharmaceutical research. Chemical developments in the field of glycols, celluloses, and silicones were followed by many important adaptations and discoveries in pharmacy. The clinical requirement of sustained blood level concentrations of certain drugs led to thorough and valuable research in the formulation of various repository dosage forms. The discovery of the antibiotics acted as a major stimulus and challenge to pharmaceutical research. Extremely unstable but potent drugs were now available but the solution of the diverse problems of formulation to suit the required routes of administration required an enormous amount of highly skillful and imaginative research. A. G. Fishburn[9] has pointed out that, "in preparation of the depot dose type, pharmacy passes beyond the bounds of merely providing stability, convenience, and elegance and makes a positive contribution to controlling the mode of action of a drug." He calls this an important milestone in pharmaceutical progress since it represents a change from empirical to scientific formulating.

Opportunities

What then are the general fields of research in which the hospital pharmacist can continue to contribute?

Literature Surveys and Reviews

Although this type of activity represents research at its most primitive and simple form, it frequently does answer the question, "what have others done before me in this particular field?" Or to phrase it another way, "what is the current state of knowledge concerning this problem?" When thoroughly prepared and skillfully written, this type of information can be directly valuable to research workers and indirectly useful as a sort of refresher course in the subject reviewed. The pharmaceutical journals often publish material of this kind and there is no point in discussing any of the numerous examples at this time.

Equipment Design, Testing or Improvement

This utilitarian type of research is particularly satisfying to the mechanically-inclined, gadget-loving pharmacist. Examples found in the literature include the following:

a. An apparatus for washing ampuls simple enough to be assembled in any hospital pharmacy.[10]

b. A study by a hospital pharmacist to determine the value of a new piece of equipment to his everyday operations. Various experiments are reported and the merits of the machine analyzed on the basis of the physical properties of the resultant product.[11]

c. The problem of the careful examination of parenteral solutions to insure freedom from foreign matter is investigated. A special viewing box is constructed by means of which trans-illumination against a dark background is conveniently arranged.[12]

d. A convenient pack suitable for flexible arrangements of administration sets used for venoclysis on the wards of a hospital is developed in a hospital pharmacy.[13]

Sterilization Techniques

Research in this area of pharmacy requires meticulous attention to detail due to the serious consequences following error or poor judgment. It is certainly advisable to obtain the advice if not the active cooperation of the hospital bacteriologist. A few examples of some recent studies should be illlustrative of possibilities for research in this field.

a. An experiment was designed to determine the temperature at which solutions of spinal anesthesia break down. As a result of this study, the pharmacist was able to conclude that the author of a book on spinal anesthesia had erred in describing a means of preparing sterile kits for spinal anesthesia.[14]

b. In a Boston collaborative study by a hospital pharmacist and a local college of pharmacy, the effect of

autoclaving on certain thermolabile substances was studied. The investigators concluded the "solutions of certain thermolabile substances frequently used in hospitals may be sterilized by autoclaving under properly controlled conditions without significantly affecting their potency." The specific conditions included the necessity for utilizing borosilicate glass, suitable *p*H ranges, and rigid time limits for autoclaving temperatures.[15]

c. A hospital pharmacist at Kongwa Hospital in far-off Tanganyika, Africa, set up an experiment designed to develop a suitable solution for the cold sterilization of surgical instruments. The effects of different solutions upon surgical instruments were observed and in addition, timed sterilization tests were conducted utilizing *Staph. aureus, B. paradysenteria,* and other organisms. On the basis of this work, standardized procedures were inaugurated at this institution for the cold sterilization of instruments.[16]

d. The breakage of parenteral fluid bottles during autoclaving was eliminated as the result of an experiment which showed that the breakage was due to scratches in the glass of the bottles made by a scrubbing brush.[17]

Stability of Pharmaceutical Preparations

All too often hospital pharmacists describe their preparations as stable when they mean that there is no visible evidence of decomposition. With many of the newer, organic drugs, the products of degradation can be determined only by chemical means and the pharmacist may inadvertently but seriously affect the therapeutic activity of a drug. The prime consideration of a pharmaceutical preparation always is its clinical efficacy and the advantages of taste, odor, color, or texture must remain secondary. However, the literature does contain a number of reports of excellent research in the field of stability of pharmaceutical preparations.

a. The chief pharmacist and bacteriologist of a Veterans Admistration Hospital in New York combined their research efforts to study the rate of decomposition and methods for controlling decomposition of solutions of the sodium salt of *para*-aminosalicylic acid. Several practical conclusions were reached relative to the effects of light, temperature, and purity of the sodium bicarbonate used in the preparations.[18]

b. The chief pharmacist of the University College Hospital in London investigated the stability of various sulfonamides intended for use by injection. Of interest is his conclusion that replacement of air by nitrogen in ampuls containing solutions of sodium salts of sulfadiazine, sulfamerazine, and sulfapyridine results in almost complete protection from discoloration. Another conclusion is that the development of color in sulfonamide injections does not appear to increase toxicity or reduce activity to any significant extent.[19]

Preservatives in Pharmaceuticals

Although this subject may properly belong in the field of stability of pharmaceuticals, it is frequently given separate treatment. There are numerous examples of studies by hospital pharmacists attempting to find superior preservatives for their preparations. The following are two typical examples:

a. The pharmacist at the Royal Hospital in Chesterfield, England, describes an interesting experiment to determine which preservative is most suitable for protecting solutions of eserine from oxidation. He reports that 0.1 percent ascorbic acid is adequate to protect eserine hydrobromide solutions for a period of six months.[20]

b. The pharmacists at Clare Hill Hospital at South Mimms, England, set up a study to determine whether the antibiotic activity of streptomycin would be adversely affected by the introduction of a preservative into the injectible solution. Chlorocresol, phenol, and phenylmercuric nitrate in suitable concentrations were studied in this respect. The investigators concluded, following the carrying out of the necessary antibiotic assays, that the preservatives tested did not in any way alter the potency of the active drug.[21]

Formulation

It is primarily in the field of formulating new and useful preparations that the hospital pharmacist appears to satisfy his thirst for professional creativeness. THE BULLETIN OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS and other journals publish many articles demonstrating widespread interest and activities in the development of original formulas. To describe most of these efforts as research would, however, be gilding the lily. They represent, in general, empirical, trial-and-error experiments without suitable criteria or standards upon which to gauge the real results. All too frequently, the hospital pharmacist starts out without sufficient preliminary investigation or background knowledge. Not only should he be completely informed of the chemical and biological properties of the active drug, but he must study its physical properties before he can start compounding. Also, he should be aware of the significant characteristics of all the excipients which might be useful in developing a particular formula. Physical properties such as solubility, dispersability, compressibility, particle size, sensitivity to light and heat, melting or freezing range, and others determine not only the most suitable form of a drug but frequently play a role in its therapeutic efficacy.

This note of caution is introduced not to dissuade hospital pharmacists from practicing their ancient art but with the hope that more science will be introduced into its practice. The many published examples of fine work in this field by hospital pharmacists in Europe and in this country indicate that it is possible to make significant contributions to therapeutics by controlled adventures in formulation.

Clinical Investigation

In a great many hospitals the clinical investigation of new drugs originating in the research laboratories of pharmaceutical manufacturers is considered a stimulating and important function

of the medical staff. The hospital pharmacist is particularly well qualified to participate in this activity in a secondary but significant role. Among the factors which play an important part in a well-controlled clinical study are the following: the selection of suitable patients, correct diagnosis, control observations, observations during treatment, planned administration of drugs, criteria of benefit, separation of subjective and objective observations, duration of observation, and corroborative investigation. By virtue of his experience in the fields of posology and dosage forms, the pharmacist is in an excellent position to become a part of the clinical investigational team. Indeed, he is best qualified to organize the distribution of clinical material during so-called blind tests in which neither the subject nor the investigators know whether drug or placebo is being administered.

In some hospitals research committees have been established with the purpose of safe-guarding the interests of the patients and the institution in the operation of research projects. There is no question in our minds as to the wisdom of inviting the hospital pharmacist to contribute of his knowledge and ability to the functions of such an important group. The measure of his contribution will, however, depend upon his interests and participation in research activities.

Summary

It is emphatically apparent from what has been presented that research has been and can be conducted in a hospital pharmacy. It is equally apparent that a research program should be carefully thought out and carried out with precision. Whenever possible, it is advisable to call upon other technical departments for assistance or collaboration. The results of such studies whether negative, positive, or equivocal should be published in appropriate scientific journals following their presentation at meetings of hospital pharmacy associations.

Although there is a general and praiseworthy desire among many hospital pharmacists to undertake research activities, it is unlikely that all participants will have a true research mentality. The able researcher not only has imagination and bold ideas but also possesses the perseverence and concentration necessary to follow an idea through to the end. Enthusiasm and spirit are essential but these must be able to withstand the cold shower of unpleasant facts. He must know how to pursue the main objective of his research and not be detoured into pleasant but unprofitable by-paths. A good research worker must know when to stop because there may come a time in any project when further work is meaningless. Most difficult but sweetest of all is the new problem that faces you upon the completion of the old.

In concluding, may we paraphrase a sentence written by a chemist a few hundred years ago, "the pharmacists are a strange class of mortals impelled by an almost insane impulse to seek their pleasures among smoke and smells, pastes and pills, poisons and poverty, yet among these evils I seem to live so sweetly that may I die, I would not change places with the Persian King."

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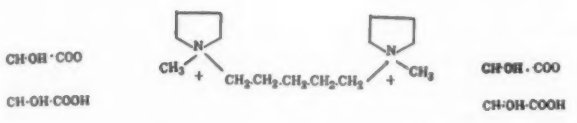
NEW and investigational DRUGS

The following monographs on some new and investigational drugs have been prepared for inclusion in a formulary of a large teaching hospital. They are presented here because of their general interest to hospital pharmacists.

Of the four drugs mentioned, chlorpromazine (Thorazine) hydrochloride and mumps skin test antigen are commercially available while pentapyrrolidinium (Ansolysen) bitartrate is still in the investigational stage but will be released soon. Although dioctyl sodium sulfosuccinate is official in the *National Formulary* it has not been generally used as a cathartic or for other internal uses.

Pentapyrrolidinium Bitartrate

Ansolysen® Bitartrate
(*Wyeth*)



PENTAPYRROLIDINIUM (ANSOLYSEN) BITARTRATE, pentamethylene-1:5-bis(1'-methyl-pyrrolidinium bitartrate), is a bis-quaternary ammonium compound containing 44.5 percent of the active ion. It exerts a long acting ganglionic blocking effect similar in general respects to that

of hexamethonium. It differs, however, in possessing about five times the absolute activity of hexamethonium salts on sympathetic vasomotor control. It has a longer duration of action and thus requires less frequent administration. Like hexamethonium, pentapyrrolidinium bitartrate reduces blood pressure by removal of the tone in vessels innervated by the autonomic nervous system. The drug is used in the management of selected cases of essential hypertension, and in peripheral vascular disease.

Side effects are prone to occur after administration of pentapyrrolidinium bitartrate unless certain precaution are taken. The patients selected for therapy with this drug should be those who are unlikely to show severe reactions. There should be a slow, gradual buildup of dosage with careful observation of the patient, and periodic checking and adjustment of dosage during maintenance treatment. Hypotension may develop. This is particularly likely when a patient assumes an upright position or stands still, and may result in light headedness or even syncope, yawning, dizziness, facial pallor, nausea, and dimness of vision. These effects can usually be prevented by following the precautions included under dosage.

The drug may also produce some degree of gastrointestinal stasis and this is more likely to occur after oral than after parenteral dosage. This condition may be prevented by the routine use of cathartics or the administration of parasympathomimetic drugs such as bethanecol (Urecholine) chloride. The cathartic used should be of the saline or irritating type and should not be one of the bulk laxatives which may aggravate the condition. Failure to observe these precautions may lead to paralytic ileus and may require the injection of neostigmine methylsulfate. Other side effects of pentapyrrolidinium bitartrate are due to ganglionic block and include dryness of the mouth, sweating, nausea and heartburn, difficulty in micturition, suffusion of the conjunctiva, mydriasis, and cycloplegia. Tolerance to the drug develops slowly.

Dosage

The dosage of pentapyrrolidinium bitartrate varies greatly with the individual. The initial oral dosage of the drug is 20 mg. given three to four times daily, increasing the dose gradually by 20 mg. increments daily until blood pressure reduction occurs or until constipation of more than 24 hours duration develops. If constipation does develop the drug must be discontinued immediately to prevent paralytic ileus. Oral dosage should be spaced at 5 to 7 hour intervals. Effective oral dosage is usually from 25 to 100 mg. at the early stages of administration although, with the development of tolerance, it may in exceptional cases reach 800 to 900 mg. per dose. Patients on hexamethonium therapy may be converted to pentapyrrolidinium bitartrate by prescribing approximately one-fifth of the dose of hexamethonium in mg. of pentapyrrolidinium bitartrate.

When the drug is given by injection the first dose must be given with great caution since extreme sensitivity may be present, particularly in uremia and intracranial complications of hypertension associated with high spinal fluid pressures. In such instances it is well to start with 1 mg. or less of the drug injected subcutaneously, taking the blood pressure every 5 to 10 minutes for one-half hour or more. The dose may then be increased at 30 minute intervals to 2, 4, and 6 mg. until blood pressure reduction is secured. Maximum reduction in blood pressure will occur usually in 15 to 30 minutes after subcutaneous administration. Injections should be made in the distal part of the extremity so that a tourniquet may be applied to prevent further absorption in the event of acute collapse. After the first few doses the patient should be watched closely and observed every 5 to 10 minutes. He should be warned not to sit or stand unless attended. Should extreme hypotension occur, the foot of the bed should be elevated, an intravenous injection of isotonic sodium chloride or dextrose started, and levarterenol bitartrate administered by intravenous drip. Since the development of ileus is also a risk in parenteral therapy, this should be watched before continuing treatment.

In uncomplicated cases the initial dose may be slightly higher, 2 to 3 mg. This is gradually increased in increments of 1 mg. to a total of as high as 10 mg. When complete tolerance has developed it will usually be found that the effective daily dosage range is 7.5 to 15 mg. given every four to six hours, usually the latter.

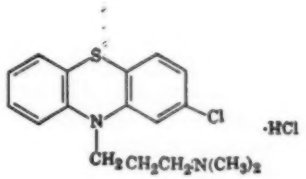
Preparations

Injection Pentapyrrolidinium (Ansolysen) Bitartrate 25 mg. vials.

Tablets Pentapyrrolidinium (Ansolysen) Bitartrate 40 mg. and 200 mg.

Chlorpromazine Hydrochloride

Thorazine® Hydrochloride
(Smith, Kline & French)



CHLORPROMAZINE HYDROCHLORIDE, 10-(3 dimethylaminopropyl)2-chlorphenothiazine hydrochloride, is a synthetic drug with diverse pharmacologic actions.

The drug is a central nervous system depressant which has been found useful in the treatment of certain neuropsychiatric disorders and because of its depressant action on the functions of certain neural centers, it is effective in the control of nausea and vomiting. Chlorpromazine hydrochloride also exerts an antipruritic action, especially in neurodermatitis and pruriginous eczema and in general for relieving itch of psychogenic origin. The drug, in addition, possesses a sedative action, is an antipyretic, and potentiates the action of certain other drugs such as analgesics, anesthetics, and muscle relaxants. It also possesses some adrenergic blocking activity with hypotensive and direct local vasodilator effects.

Chlorpromazine hydrochloride is used for the prevention and relief of nausea and vomiting, including that induced by diseases such as cancer or gastroenteritis, drugs such as nitrogen mustards or broad-spectrum antibiotics, irradiation, and pregnancy. In neuropsychiatry the drug has been found useful in the symptomatic control of severe agitation and acute anxiety such as occurs in manic-depressive psychosis, schizophrenia, senile psychosis, and in psychoneurosis. The drug is also used as an antipruritic.

Side effects may occur following administration of chlorpromazine hydrochloride. The most prominent of these is mild or moderate drowsiness which occurs in approximately 30 to 40 percent of patients. The drug should be used with caution in ambulatory patients, especially those driving automobiles. Drowsiness may often be greatly reduced by lessening the dosage. Other side effects which occur in a relatively small proportion of patients include dizziness, simple tachycardia, and transitory postural hypotension. These are more prone to occur after parenteral administration of the drug. Side effects referable to the action of the drug on the autonomic nervous system include dryness of the mouth, nasal congestion, constipation, and miosis or mydriasis. Mild jaundice of short duration has been reported in a very small number of patients but its occurrence is rare. The use of the drug is contraindicated in comatose states due to central nervous system depressants. Care must be taken to guard against overdosage when it is used concomitantly with depressant drugs.

Dosage

The dosage of chlorpromazine hydrochloride must be individualized according to clinical response. The initial oral dose for mildly to moderately affected patients is 10 mg. given three to four times daily. This may be increased as necessary or as tolerance permits to 20 or 25 mg. three or four times daily. A few patients may require as much as 50 mg. three or four times daily. The dosage for children under 5 years of age is 1 to 2 mg. per Kg. of body weight given two or three times a day. Children over 5 years may receive from one-third to one-half of the adult dose.

The initial dose for the seriously ill non-ambulatory patient may be 50 mg. three or four times a day given either orally or by intramuscular injection. The dosage should then be adjusted according to response. Intramuscular injection should be made deep into a large muscle mass. To guard against postural hypotension the patient should be lying down and remain in this position for at least 30 minutes after the injection.

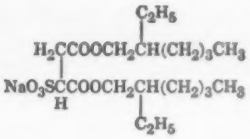
The drug should be given intravenously only by an experienced anesthesiologist. Intravenous administration may lead to severe hypotension. For intravenous administration 10 to 50 mg. to the drug is diluted to not less than 20 ml. and infused slowly over a period of approximately 5 minutes. Subcutaneous injection is contraindicated because of local irritation.

Preparations

Injection Chlorpromazine (Thorazine) Hydrochloride 25 mg. per ml.; 2 ml. ampuls.

Tablets Chlorpromazine (Thorazine) Hydrochloride 10 mg.; 25 mg.

Dioctyl Sodium Sulfosuccinate N.F. Aerosol OT



DIOCTYL SODIUM SULFOSUCCINATE is an emulsifying and wetting agent which may be used alone or in combination with other cathartics in the treatment of constipation. It is used principally to break up fecal impactions and generally to loosen hard stools. It is useful in the treatment of patients with megacolon and those who are confined to bed for long periods and thus tend to develop dehydrated stools.

Dosage

Dioctyl sodium sulfosuccinate may be given orally or by rectal instillation. The oral dose for adults is 1 ml. of a one percent solution twice a day, taken in orange juice or milk. For infants up to one year of age the dose is 4 drops twice a day; and for children up to 5 years of age the dose is 10 drops twice a day.

For rectal administration a 0.1 percent concentration is used in a small saline or mineral oil retention enema.

Preparations

Solution Dioctyl Sodium Sulfosuccinate 1 %.

Mumps Skin Test Antigen (*Lederle*)

MUMPS SKIN TEST ANTIGEN is prepared from the allantoic fluid of chick embryos infected with a known strain of mumps virus. The control is prepared from normal allantoic fluid from noninfected embryos.

Mumps skin test antigen is used for the diagnosis of mumps. It is useful particularly for adolescents to determine their resistance or susceptibility to mumps. It may, however, be used on patients in all age groups. Susceptible individuals may be vaccinated, even after exposure, since the incubation period of mumps is rather long.

Dosage

The dosage of mumps skin test antigen is 0.1 ml. injected intracutaneously on the inner surface of the forearm. The dosage of the control is also 0.1 ml. and its use is important since it serves to determine whether the hypersensitive response is due to the mumps virus protein or to normal egg proteins. The test is read in 24 to 35 hours by measuring the area of erythema. Those who exhibit a reaction of 15 mm. or more may be regarded as resistant to infection while a lesser reaction is considered as an indication of susceptibility to mumps. In a few cases, however, those who have a past history of mumps may give a reaction of less than 15 mm.

Preparations

Injection Mumps Skin Test Antigen 1 ml. vial (10 tests) with Control.

Dr. Scudder examining a patient from the front of the roadside ambulance while the compounder takes the physician's prescription from a patient.

pharmacists and a South Indian hospital

by BETTY K. JOB

AS MORE PHARMACISTS participate in the International Pharmaceutical Federation we become more interested in pharmacy as it is practiced in other countries. Often there is much we can learn from pharmacy as practiced in other places and it is often interesting to compare how their methods differ from ours. Any hospital pharmacist who is not happy with the layout of his pharmacy department and the equipment with which he has to work, need but make a short visit to a pharmacy in a hospital in India to consider himself fortunate indeed. Many pharmacists would feel that it would be impossible to give efficient service with the equipment available. The pharmacists and compounders there do not have our time and labor savers but they are able to make good use of the limited facilities they do have. Although Indian pharmacy may not have much to offer countries in the way of new and better methods for practicing pharmacy, it is interesting to look in on one of their hospitals.

The mission hospital in Vellore, South India, having 500 beds and a large missionary staff has higher standards than most hospitals in India, but even then there is much to be desired. This hospital is located in a small town (100,000 people) 80 miles from Madras, a seaport on the Bay of Bengal. The annual drug budget is $23,000 and their staff consists of two pharmacists, eight compounders, ten students, and four untrained personnel.

The pharmacists are English, although an Indian recently was hired to take the place of a pharmacist on furlough in England, and the remainder of the staff are nationals. The compounders are stationed as follows: one for sterile solutions, one for bulk compounding, two for outpatient prescriptions, and one for inpatient prescriptions, two

BETTY K. JOB is Assistant Chief Pharmacist at St. Luke's Hospital, Cleveland, Ohio. She spent three years in India during which time she worked as a pharmacist at the Christian Medical College in Vellore, and later with the Mission Tablet Industry, Bangarapet.

for ward baskets, and one for the roadside ambulance which goes out from the hospital to the villages two days a week. The students who come directly from high school for their year's training are unfamiliar with the Western ways and pharmacy is a completely new world to them. Needless to say, they have little to contribute at first, but being eager to learn they are placed in the different sections immediately. Within six months they have become acquainted with routine techniques and at the end of the year's training after passing a government examination they are ready to go into a hospital and take charge of the compounding room.

Inpatient Pharmacy

The hospital pharmacy, or compounding room as it is more commonly called, is situated on the first floor of a three story building which is built around a patio. The inpatient pharmacy is a room about 20 by 35 feet, with windows opening into the hospital compound on one side and into the center court on the other. All the windows have iron bars, but only those on the outside of the building have glass in them. Their only purpose is to keep the rain and dust out, since the temperature range is between 65 and 116 degrees throughout the year. The windowsills on the courtside of the pharmacy are used for such items as sterile solutions and intravenous sets which might be needed after the pharmacy is closed. A desk in front of an open door serves as a counter where nurses and ward aides may bring the patients' charts and prescriptions.

This dispensing room has three long wooden work benches. The first is used for dispensing, the second for bulk compounding, and the third for preparing powders, tablets and pills, and also serves as the students' work desk during their dispensing laboratory. The bulk compounding consists mainly of mixtures, liquids, pills, and ointments. Mixtures and solutions are used in place of elixirs since alcohol is not readily available. Syrups are also limited because sugar is strictly rationed. Ointments are made in ten pound quantities on a large ointment slab and are stored in three gallon crocks. Most of the liquids are made in one gallon quantities but a few of the more commonly used items are made and stored in three gallon enamel cans. Small kerosene stoves (prima stoves) furnish any needed heat. These stoves, which stand about twelve inches high, are kept on the floor and are used by the compounders in their usual squatting position. You will wonder that their sarees and dhoti's (the long garments worn by the nationals) do not catch fire, but they are accustomed to avoiding the flame since the stoves in their homes are also built on the floor. Blauds pills are a popular drug and are hand made by the thousands since many of the Indians are anemic. They are available from drug houses but the pharmacists feel that they are fresher and better if made about every two weeks. Many can be made in a short time by having the compounder mix and cut while the students roll them into pills.

Compounding

The manufacturing equipment for non-sterile items consists of two tablet machines, sieves, and a large ointment slab. The two hand-operated tablet machines are discards of manufacturing houses and they spend much of their time in the repair shop. The parts cannot be replaced but the Indian workman can make just about anything if he has a pattern. Sodium bicarbonate tablets are the only tablets made on the machines because of the limited drying space for the granules. Making just this one kind of tablet saves a tremendous amount of time since they would otherwise be folded into powders.

Powders are the common form of oral medication. These powders are folded by the hundreds each day. Each afternoon the compounders and

LEFT: *A small section of the buildings of Mission Hospital with a rocky hill in the background. The small structure in the center is the chapel with the hospital ward buildings surrounding it.* RIGHT: *Preparation of sterile solutions.*

students will gather around the table and fold powders, since most of the other work in the pharmacy is completed in the morning. The compounder divides the powders on a pill tile and puts them on the papers. The students then fold them and write the contents on the outside of the package. To use clean powder papers which could be used for note paper would be considered a waste; so instead, old hospital records, magazines, instruction sheets inside of medicine boxes, old letters, and receipts are kept for this purpose. If there is time, the papers are sterilized, but if needed immediately they are collected and used as they come from the other departments. Powders and tablets are then dispensed in used envelopes which all staff members are instructed to save and bring to the pharmacy, or, in old penicillin boxes.

The British Pharmacopoeia is used as a standard although there is an *Indian Pharmacopoeia*. This double standard was probably brought about by the large number of foreigners on the medical staffs in hospitals before India's independence. As India throws off many of its English habits there will probably be a swing back to its own Indian standards. Recently an *Indian Codex* was published which helps to correlate the different Indian languages of which there are 15 and over 200 dialects. *The Extra Pharmacopoeia* by Martindale and *The British Pharmaceutical Codex* are at present necessary reference books.

The ward boxes are brought in daily by the hosital peons when the pharmacy opens and are delivered when filled. The bottles from the wards are filled by the students and checked by the compounder. The entire order is then checked by a pharmacist before being returned to the floor. The patients' charts for special medications are brought to the compounding room and the medications ordered are taken directly from them. The amount sent, the date and the initials of the dispensing compounder is placed on the chart and the medication and chart are then picked up by the floor. The only drugs ordered by prescription are antibiotics which must be paid for at the pharmacy before they are dispensed.

The pharmacy opens at 7 A.M. and stays open until 1 P.M. A compounder or pharmacist is then on call until 3 P.M. when the pharmacy reopens. All but one compounder leaves at 6 P.M. and the remaining one closes the pharmacy at 7 P.M. A pharmacist is then on call for the night which causes no inconvenience since he lives on the hospital grounds and most of the social activities also take place there. Pharmacists are therefore easily available for any emergency needs. The hours are the same seven days a week but the staff is kept at a minimum on Sunday with the day being divided into three shifts to do the necessary dispensing.

Sterile Solutions

The sterile solution room is about 20 feet square and is equipped with two long white cupboard work tables, a plain work table, and a built in storage cupboard for small solution storage. One table with sink is used for the cleaning of tubing and the reassembling of sets for intravenous medication and for blood giving and receiving. The other two tables are used for making sterile solutions. A motor is used for suction filtering of solutions through a sintered glass filter. The solutions are made in two gallon quantities and are bottled in one pint bottles which are closed with a metal cap having two holes and rubber disc liner. Brown paper is tied on top, and the name of the solution and date of preparation is written on this. The solutions are sterilized in a small upright autoclave, using a prima stove for heat. Old penicillin bottles are used for bottling the smaller solutions. The rubber stoppers from these bottles are saved and then retied onto the bottles. Brown paper is tied over the top. This procedure is time consuming and hard on the fingers but is effective for a sterile closure. As many as 2,000 small bottles may be prepared in a day since these solutions are sold to other hospitals in the area. All labels are typed on plain paper then glued onto the bottle. The penicillin for the hospital is diluted in this room by a pharmacist using a closed system similar to the Soluters on the market in this country. This equipment was hand made in India using parts imported from America.

Outpatient Pharmacy

The outpatient pharmacy is a 10 by 25 foot room across the hall from the regular pharmacy and is in the middle of the outpatient department.

Stock bottles and jars for outpatients are kept handy at both ends of the room where the two dispensing windows are. One window is for men and the other for women. This department is only open in the morning when the outpatient department is open. If there are a few late prescriptions they are taken to the inpatient pharmacy to be filled. Approximately 10,000 outpatients are seen in the clinic each month.

The medication ordered is written on the patient's card along with the history and diagnosis. This card is then brought to the pharmacy along with the bottle or bottles needed for taking the liquid medication home. If an immediate dose is ordered the medication is measured and given the patient in the graduate. Since the Indians never touch a drinking vessel to their lips, unless it is in their own home, the graduate is not contaminated. The remainder of the medication is put into the patient's bottle which is hoped to be clean.. If they do not bring a bottle they are charged an extra eight cents (half a day's pay for most people) for a new one. Labeling the bottle is not considered necessary because very few of the patients can read; so oral instructions are given for the proper use of the medicine. Spoons are not commonly found in the Indian homes since they eat with their fingers, so the patient must be told to take a certain fraction of the amount in the bottle. The patient's card is then dated, initialed and then returned to the outpatient department for filing.

Roadside Dispensing

The roadside dispensary is part of the outpatient department and it is a way of taking the hospital to the patient. A physician, medical student, nurse, and compounder go out in an ambulance to make certain known stops. The people will wait for many days although they know the exact day that the doctor is due. After the physician examines the patient he will write the medication wanted on a slip of paper.The patient takes this to the compounder who is sitting on the side of the open ambulance. All the medicines which are used for these patients are taken along in two large boxes. Ointments are placed on a piece of paper and wrapped in this manner, and the other medications are dispensed in the same manner as in the hospital. If the patient needs hospitalization he is instructed to wait until the ambulance returns after its day's work. The patient is taken to the hospital along with one member of the family who will cook the patient's meals and provide some of the necessary care for the patient. There are buildings on the compound where relatives may live and cook, or sometimes they sleep on the floor beneath the patient's bed.

Drug Supplies

Most drugs are purchased direct from English firms which have branch offices in Madras. Many Indian companies have drugs which sell for much less and may be up to standards, but as yet the Indian government has not set up provisions for enforcing their pure drug laws, so there is no way to be sure of what you are buying. Because a few companies and individuals have taken advantage of the chance to put inferior drugs on the market, they have done much to hinder the development of the pharmaceutical industries in the country. However, the government has recently built a chemical plant to manufacture sulfa drugs and penicillin and another is to be completed soon. American companies are becoming associated with Indian companies in India and in this way are benefiting both countries. Drugs are shipped by rail in wooden boxes with metal bands around them to prevent tampering en route.

The pharmacists, who are distinguished from compounders in that they have had a four year pharmacy course, spend much of their time in teaching. The compounding students must be given courses in *The British Pharmacopoeia,* materia medica, chemistry, pharmacology, dispensing, physiology, and first aid in their one year of training. All these subjects are covered by the government examination with emphasis on dispensing, doses, identification of drugs and *The British Pharmacopoeia.* The subjects are taught in English since this is the only common language of the students who come from various language areas. They study English during the three years in high school which gives them a reading knowledge of the language, but it is very difficult for them to understand English as spoken by the Europeans or Americans. The lectures therefore are written on a black board for the first few months. At the end of the year however they not only speak and understand English quite well, but can also speak Tamil which is the language of Vellore—one which may be quite different from their mother tongue. The pharmacist is also required to teach pharmacy to the third year medical students since it is a requirement along with the pharmacology course. The nursing students have a six week course in making solutions which is taught also by the pharmacist.

This is pharmacy at neither its best nor at its worst in India for there is much which can be done in the way of equipment and materials. Some hospitals receive the best in intravenous equipment from the U.S.A. but then have the difficulty of finding people who know how to use it. As cooperation between people and nations becomes improved, better equipment, materials, and trained personnel will become more available to India.

Your Role in Implementing the Minimum Standard

Dear Member:

Four years ago the ASHP adopted the *Minimum Standard for Pharmacies in Hospitals.* This significant achievement was the result of a great deal of work by a number of competent hospital pharmacists. The document represents group opinion of the essential elements of good service and the philosophy of many practitioners. Since this concise definition of hospital pharmacy service was presented and approved by several allied organizations, hospital pharmacy has become recognized and better understood by others.

The Committee on Pharmacy Practice of the Catholic Hospital Association presented to the SOCIETY, at our Decennial Meeting, a Point-Rating Plan for evaluation of pharmacy service in hospitals. By detailed description and by the establishment of a relative value of each criterion, this excellent work provides not only a means of scoring but also suggests the path toward compliance with the Standard.

It has been the objective of this Committee in recent years to create greater interest in the Standard. Individuals and chapters have been urged to voluntarily study the Point-Rating Plan and use it to evaluate the service in their own areas. This program has had some success but not nearly enough interest has been shown by our ASHP members. As an organization, our goal is the improvement of hospital pharmacy practice both individually and totally. We look forward to the accreditation of pharmacy departments in hospitals. This should be the ultimate use of the Standard.

This year the committee is working on a check list (based on the Standard and the Point-Rating Plan) which we hope may serve as a practical means by which an accrediting organization may judge the pharmacy service in any hospital.

Most important to each ASHP member, however, are the benefits which can be derived by now using the Standard and the Point-Rating Plan to improve and extend the service for which he or she is responsible.

With these thoughts in mind, may I suggest that you consider the following questions:

1. Have you recently read or studied the Minimum Standard and the Point-Rating Plan?
2. Have you considered the advantages of voluntary compliance with the Standard?
3. Have you ever informed your administrator that the SOCIETY has developed a *Minimum Standard for Pharmacies in Hospitals,* and the A.Ph.A., the A.H.A., the C.H.A., and the A.M.A. have all approved this document?
4. Have you ever given your administrator a copy of the Standard to read or keep in his files?
5. Have you ever called your administrator's attention to the fact that the project or development you would like to include in the pharmacy program is one which is established as essential or desirable according to the Minimum Standard?
6. Do you believe that the pharmacy service in your hospital meets the recommendations of the Standard?
7. Have you evaluated the service in your own department according to the Point-Rating Plan?
8. Has your local or regional chapter ever discussed the Standard and the Point-Rating Plan in a meeting in the past two years? If so, do you think the subject should again be programed soon?

Affirmative answers to these questions would signify that you are definitely participating in the advancement of hospital pharmacy.

Cordially yours,
Walter M. Frazier, *Chairman*
Committee on Minimum Standards

the POINT-RATING PLAN

by Evlyn Gray Scott

In America during the past ten years, as you are all aware, there has been a phenomenal growth in the number of hospital patients. This increase in hospital patients has necessitated an increase in available hospital beds which were provided either by remodeling or by new hospital facilities.

During the same period cost per patient day has more than tripled; a new factor has to be dealt with in the payment of patients' bills—hospital insurance companies; diagnostic aids have multiplied; and the therapeutic measures have become complex. Pharmacy plays some part in most of the therapeutic facilities of the modern hospital. In today's overall complex hospital picture pharmacy finds itself involved with an increasing budget; finding adequate storage for many more heat or cold sensitive drugs or chemicals; helping hospital personnel through the maze of confusing drug names; helping with the selection of basic drugs so that adequate care may be given a patient without unduly adding to the cost per patient day; providing sufficient supervision for the pharmacy technical staff; and many other involved problems that any of you could add to the list.

Education and Training

Hospital pharmacists have looked forward to the time when the administration of hospitals and pharmaceutical educational faculties would be aware of the part pharmacy should contribute to the nation's hospitals. The time has arrived, and why aren't we as satisfied as we had expected to be? For the reason that there are many more places to be filled with competent hospital pharmacists than there are pharmacists available.

An adequate basic college degree in pharmacy should provide sufficient groundwork upon which to build the specialized training needed to cope with today's hospital pharmacy. For the recent graduate of pharmacy the hospital pharmacy internships provide this specialized training. But, there are not enough such plans nor enough graduates enrolled in them to supply our hospitals' needs. Then how can the situation be aided until the above condition changes? Self education of the present hospital pharmacists will aid us now. And how can we do this? One of the aids that has helped in the past ten years has been the specialized professional publications—both periodicals and books. Probably the one of most general help has been our Society's Bulletin. The Bulletin as we have it today is the result of the devoted care and time given it by Mr. Don Francke and Miss Gloria Niemeyer. Another aid has been the Institutes and refresher courses for hospital pharmacy held all over the United States. Part of the success of the Institutes and refresher courses has been due to the great amount of time and thought given to them by a great number of people interested in hospital pharmacy. Conventions and local meetings of pharmacy groups have aided not only by their programs, but because of the opportunity

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Presented to the Michigan Society of Hospital Pharmacists as the 1954 Harvey A. K. Whitney Lecture Award, April 8, 1954.

Evlyn Gray Scott

... an opportunity

afforded for pharmacists to become acquainted with others of their profession and so more easily exchange ideas and enthusiasms.

Standards For Pharmaceutical Service

In going back to the hospital as a whole when we look for one single thing that probably has contributed more than any other one factor in providing the American people with the best hospital care to be found in the world today, we find standardization programs such as that started by the American College of Surgeons years ago. Now we in pharmacy have been very fortunate in having some foresighted pharmacists who were aware of what hospitals should be getting from their hospital pharmaceutical service. Two such people were Mr. Edward Spease, one of the recipients of the Harvey Whitney Award, and Harvey Whitney for whom the Award was so appropriately named. Mr. Spease was instrumental in formulating the original *Minimum Standard* which was adopted by the American College of Surgeons. The concepts found in this standard are the same as those in our present *Minimum Standard*. There is one difference; the concepts have been expanded. I imagine at the time of the original writing Mr. Spease hoped there would not be too many, when they read them, that would think he lived in an ivory tower instead of the practical world of teaching hospital and active pharmacy college.

Your own Mr. Whitney established the hospital pharmacy internship at the University of Michigan. I believe that the examples they set and their teaching programs inspired and influenced so many other pharmacists that it was possible to develop the groundwork necessary, over the past years, to have made possible the development of the present *Minimum Standard for Pharmacies in Hospitals*. We are fortunate and should be ever grateful that precepts of what constitutes modern hospital pharmacy were developed long enough before this great upsurge in modern hospital care so that hospital pharmacy is ready to present a united front based on sound concepts when carrying out the objectives of the pharmacy in a hospital.

The Point-Rating Plan

As has been mentioned, we cannot wait for sufficient special formal training such as internships of hospital pharmacists but must turn to self education. Three aids have been mentioned—first, THE BULLETIN; second, the Institutes; third, Conventions and Meetings; and now a fourth is added—The Point-Rating Plan to implement the *Minimum Standard*. This plan was worked out by Mr. Ray Kneifl, Executive Secretary of The Catholic Hospital Association with the help of a Committee made of Catholic Sisters who are hospital pharmacists. The plan was for the aid and education of the Catholic group of hospitals. The universality of the plan was recognized when the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS accepted this plan at the Philadelphia Convention in August, 1952.

To me, the Point-Rating Plan represents more than a tool to implement the *Minimum Standards*

—rather it represents an opportunity for every hospital and hospital pharmacist to become aware of where he and his hospital pharmacy stand as regards the standards for hospital pharmacy in the United States. This affords the opportunity for one to locate the strong points as well as the weak, where more emphasis must be placed, where we are to look for help and where we will be able to help others. And why is this such an opportunity? It is an opportunity to help yourself. We can foresee in the not too distant future the need of a standardization body evaluating the pharmacy department of the hospital. Until then we have the opportunity of correcting and improving our own weak points. But regardless of this, most of us like keeping up to a mark, but sometimes we get a little confused as to what is the mark. I suppose that it works something like competition. We sometimes need to get a stimulant from an outside source to keep up our spirits. So we need a measuring tool, and now we have one for hospital pharmacy—The Point-Rating Plan.

There comes a time during feverish activity, shortage of time, ever increasing responsibility, piling up of unread literature and endless conferences, when we must find time to stop and survey our results to see if we are still on the road toward our goal. This appraisal is absolutely necessary if we are to keep forging ahead with our other partners in the hospital team. Even if one feels he cannot spare the time to attend conventions and institutes at distant places, one need have no doubt as to how well he or his department measures up in the field of good hospital pharmacy. Here is a rating plan one can study, alone, if necessary, and at his own convenience. The results would be more objective if he could do it with someone else who has some understanding of hospital procedures. Using the plan alone the pharmacist might be too modest in his scoring—then he does his hospital and himself an injustice. On the other hand he does an injustice to both if the scoring is too high, because then a false sense of security or performance prevents expending the necessary thought and energy to correcting the weak spots. Should the rating be too low at first, here is the opportunity to become aware of which areas need reinforcement. A low score does not necessarily place the blame on the pharmacist, because this score might be the result of conditions that only the administration can remedy. The pharmacist should feel that he has the backing of the whole American Society of Hospital Pharmacists as he presents these points to the administrator.

We are all too busy; we need the stimuli of something such as the Point-Rating Plan to make us stop and think about our overall plan. Working hard does not excuse us from obtaining the expected and necessary results. Pharmacy is no longer working alone, no longer can it be hidden off in a far corner because the past few years have taken pharmacy off of its island of isolation. Partnership in the public health team carries the responsibility of constantly keeping abreast of pharmaceutical progress. So we need to review our past and present performance if we are to decide what we need to do today and tomorrow to keep our part of the partnership in good order.

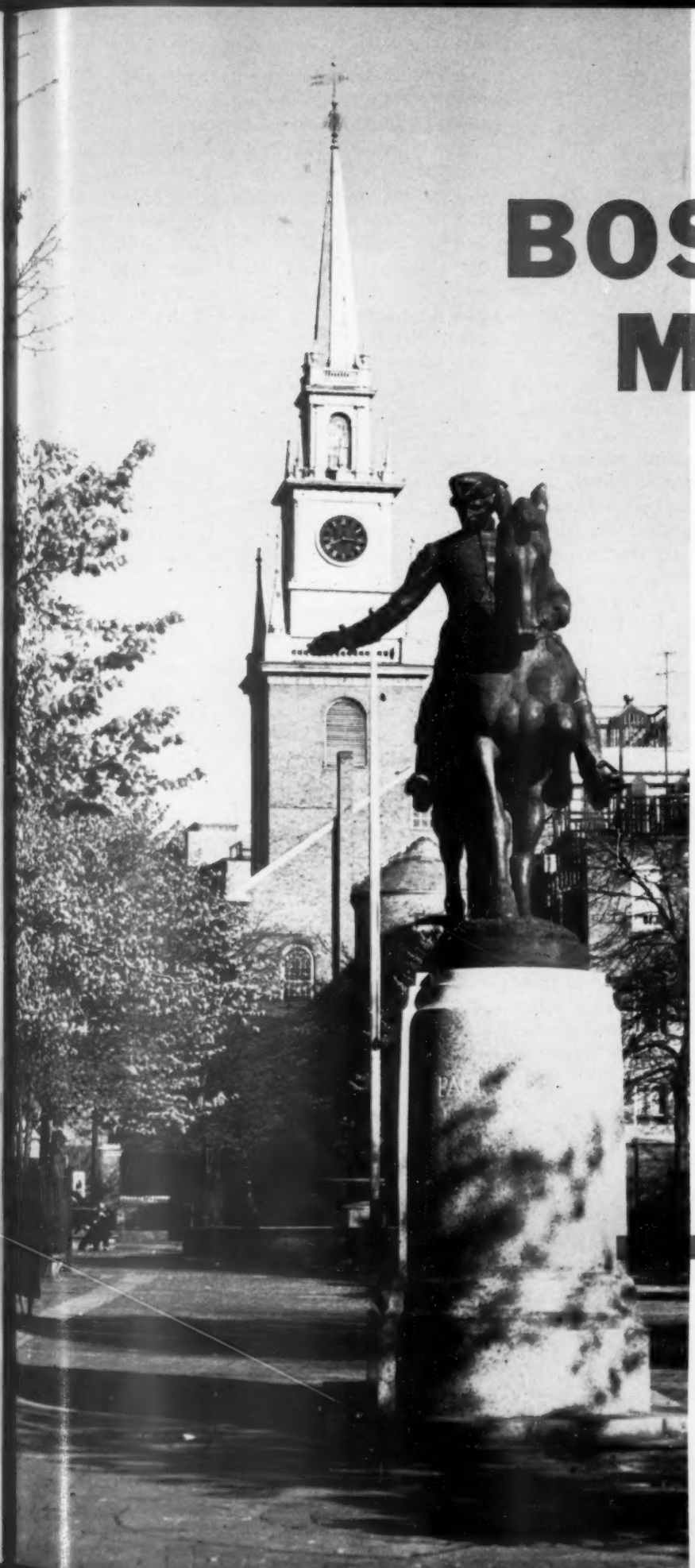
There are some things about the Point-Rating Plan which look a little formidable at first glance. For instance, there are a lot of pages with a lot of print. There is the temptation to put it aside and do something about it another time. You know, the time that never comes. One needs to remember that this rating was designed to fit all hospitals —large, small, specialized, or general; and to be applied by skilled pharmacists with varied experiences, or the neophyte, and to be understood by many types of administrators. To fit such a great array of things and people an explanation that is extensive is needed. By the time anyone has gone through such explanation and definition of terms, and checked the rating sheets a much clearer picture of what comprises hospital pharmacy is provided, even if a rather complex one. Is there anyone who still thinks that hospital pharmacy is a place to retire, or an easy berth? Then here is an outline to quickly disillusion that innocent.

This plan is not meant to be static. There is no reason it should not be worked over to try to simplify or clarify it. In fact, the plan in its present form is simpler than the form first presented in July-August (1952) issue of The Bulletin.

The categories of the Point-Rating Plan are specifically numbered to show which minimum standard they are implementing. The total possible basic points is now 2000 so that each 20 points equals one percent. This makes the figuring simple. There probably could be some way to summarize the plan so that we would have a long and short form—something like the government has with its short and long tax blank.

Conclusion

In conclusion, the Point-Rating Plan affords the opportunity for every hospital pharmacist to see the maximum possibilities of hospital pharmacy in all its ramifications and the inter-relationship between the various categories, and with this understanding all hospital pharmacists should be able to have a feeling of kinship to every other hospital pharmacist. This united strength should be the guarantee of the future progress of pharmacy in its special field of hospital pharmacy.



BOSTON MASS.

ASHP MEETS WITH APhA

AUGUST 22-27

Old North Church with Paul Revere

BOSTON

AUGUST 22-27

BOSTON, THE OLDEST CITY IN THE UNITED STATES, will be host to the 1954 Convention of the American Pharmaceutical Association scheduled for August 22-27. Here, hospital pharmacists from all parts of the country will attend meetings of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS on Sunday, Monday, and Tuesday, as well as the A.Ph.A.'s General Sessions and Sections during the remainder of the week. Also, there will be an opportunity to visit outstanding pharmacy departments in leading hospitals and medical centers. Among these are the Massachusetts General Hospital, Peter Bent Brigham Hospital, Beth Israel Hospital, and the internationally famous Lahey Clinic and Children's Hospital.

Massachusetts Society Plans Events

The Massachusetts Society of Hospital Pharmacists, which is one of the Society's earliest affiliated chapters, will play an active role in making local arrangements for the hospital pharmacists during the week. On Sunday afternoon, immediately following the meeting of the House of Delegates, the members of the local hospital pharmacy group will sponsor a tea for ASHP members in the Society's suite at the headquarters' hotel. This will offer an opportunity for those attending the Convention for the first time to meet the members of the local group as well as the ASHP Officers and Executive Committee. On Thursday afternoon, the Massachusetts Society will arrange for a tour of the pharmacy departments in several of the leading hospitals and Monday night will be open for any special arrangements which will be made by the Massachusetts Society.

Dr. William E. Hassan, President of the Massachusetts Society has appointed the following people to serve on the local committee of hospital pharmacists: Mrs. Ethel Pierce, South Shore Hospital, South Weymouth, Mass.; Miss Ida Guber, Faulkner Hospital, Jamaica Plain, Mass.; Mrs. Margaret Shea, Norwood Hospital, Norwood, Mass.; Mr. Alfred Rosenberg, Public Health Service Hospital, Boston; Mr. John T. Murphy, Massachusetts General Hospital, Boston; Mr. Ernest Lentini, Peter Bent Brigham Hospital, Boston; Mr, Joseph Shibel, Lawrence General Hospital, Lawrence, Mass.; and Mr. Edward Deeb, Veterans Hospital, Rutland Heights, Mass.

Also included as part of the special events will be the Society's Annual Breakfast which will be held on Tuesday morning. This is an informal get-together with the president-elect presiding.

House of Delegates

The ASHP will first convene on Sunday afternoon, August 22 at 2 P.M. with a House of Delegates Meeting. Here, the Society's 38 chapters will be represented by Delegates who, along with the Executive Committee and Chairman of the Special Committees, make up the voting delegates. However, the meeting is open to all members of the SOCIETY. At this time, President-Elect George Archambault will deliver his inaugural address outlining plans for the coming year. Also, resolutions and matters which will be acted on during this meeting will be discussed. It is hoped that the officers of each of the affiliated chapters will make certain that their group is represented at the Annual Meeting. Delegates will be expected to present reports in writing and there will be an opportunity to discuss any matters which need special attention by the national body.

PHOTOS— OPPOSITE PAGE, LEFT TO RIGHT: *Faneuil Hall—"Cradle of American Liberty"; Captain Parker at Lexington; Public Gardens—Downtown Boston.*

Business Sessions and Program

General Sessions will be held on Monday and Tuesday with a full program for the hospital pharmacists. Reports from the Officers and Committee Chairmen will be presented at the Monday morning session. The Society's Committee on Program and Public Relations, headed by Mr. Robert Bogash, has arranged for presentation of a number of timely papers by national figures in pharmacy as well as several practicing hospital pharmacists.

A panel discussion on "The Formulary System —Its Origin, Purpose, and Implementation," will be an outstanding feature of the meeting. Participants will include Dr. Don Francke, University Hospital, Ann Arbor, Mich.; Mr. Walter Frazier, Springfield City Hospital, Springfield, Ohio; Dr. Charles Lecourneau, Chairman of the American Hospital Association's Council on Professional Practice; and Mr. J. Solon Mordell, Division of Civilian Health Requirements, P.H.S., Washington, D. C. Mr. Grover C. Bowles of the Memorial Hospital Association of Kentucky, Inc., Washington, D. C., will moderate the panel.

Mr. Edward Hartshorn, a recent intern in hospital pharmacy at the Jefferson Medical College Hospital in Philadelphia, will present a paper entitled "Suggestions for Correcting Inconsistencies in Hospital Formularies." This presentation is the result of a study of approximately sixty hospital formularies in use throughout the country to determine similar formulas widely used in hospitals and which, if standardized, could be helpful to physicians and pharmacists practicing in different institutions throughout the country. Since the study was done after consultation with Dr. Justin L. Powers, Chairman of the Committee on National Formulary, he will discuss with the hospital pharmacists the possibility of inclusion in the N.F. certain formulas widely used in hospitals. This would clarify some misunderstandings regarding similar formulas, varying slightly in composition, which are available in different institutions under different names.

Mr. John Murphy, Chief Pharmacist at the Massachusetts General Hospital will present a paper on the "Preparation, Sterilization, and Preservation of Ophthalmic Solutions," which will be of considerable practical interest.

Among the national figures on the program during the two-day meeting will be Dr. Robert P. Fischelis, Secretary of the American Pharmaceutical Association, who will bring hospital pharmacists up-to-date on "Trends to Watch" with particular reference to hospital pharmacy practice and its relationship to the total profession.

Covering the historical aspects of the development of pharmacopoeias and formularies, Dr. Glenn Sonnedecker, Secretary of the American Institute of the History of Pharmacy will discuss "Pharmacopoeias and Formularies—A Background

Convention Information

A.Ph.A. Convention—
Hotel Statler, Boston, Aug. 22-27

ASHP House of Delegates—
Sunday, 2 P.M.

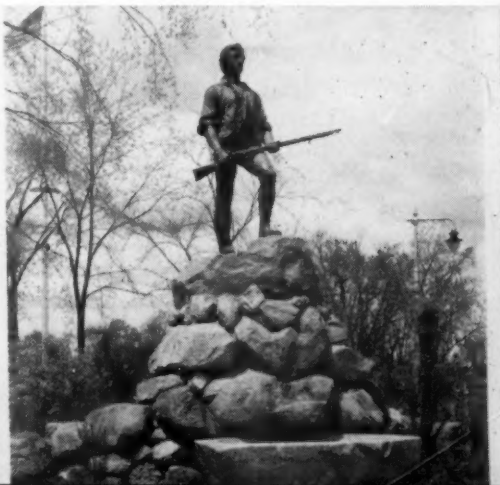
ASHP General Sessions—
Monday and Tuesday

ASHP Breakfast
Tuesday, 8 AM.

A.Ph.A. Section Meetings—
Wednesday, Thursday and Friday

A.Ph.A. General Sessions—
Wednesday, Thursday and Friday

A.Ph.A. Annual Banquet—
Thursday Night



Study." Closely related to this will be a paper on "The International Pharmacopoeia— Its Evolution and Its Role in World Health," by Dr. E. Fullerton Cook, formerly Chairman of the Committee of Revision of the Pharmacopeia of the United States, and from 1947-1950, a member of the Expert Committee on the Unification of Pharmacopoeias of the World Health Organization of the United Nations.

Other papers scheduled during the ASHP meetings are as follows:

"Should the Pharmacy Have 24-hour Service?" by Norman Baker, The New York Hospital, New York City.

"A Study of the U.S.P. Requirements for Disintegration of Tablets," by Miss Thelma Lezberg, Massachusetts General Hospital, Boston.

"Preliminary Evaluation of a New Iodine Germicide," by Robert Bogash, Lenox Hill Hospital, New York City.

"An Internship Manual for Hospital Pharmacy," by Herbert Flack, Jefferson Medical College Hospital, Philadelphia, Pa. and Arthur W. Dodds, U.S. Public Health Service Hospital, Baltimore, Md.

"An Adequate Pricing Schedule in Hospitals," by S. Barnard Jeffries, Brooklyn College of Pharmacy, Long Island University, Brooklyn, N.Y.

"Preparation of a Stable Injection of a Mixed Alkaloidal Salt and a Barbiturate," by Louis Jeffrey, Massachusetts General Hospital, Boston.

"A New Concept to Prepackaging Tablets in the Hospital Pharmacy," by Rosemarie Pisanelli, Lenox Hill Hospital, New York City.

"A Sterile Solutions Program," by Frank L. Larsen, Administrative Assistant, The Delaware Hospital, Wilmington, Del.

"Proposal for a Hospital Formulary Service," by Don E. Francke, University Hospital, Ann Arbor, Mich.

"Preservatives for Parenterals," by Wesley Gladhart, Ronald Wood and W. Arthur Purdum, Johns Hopkins Hospital, Baltimore, Md.

A.Ph.A. Meetings

Throughout Wednesday, Thursday and Friday hospital pharmacists will participate in the A.Ph.A. General Sessions and the Sections—Practical Pharmacy, Scientific, Education and Legislation, Economics, and Historical. Tentative plans are being made by the Section on Practical Pharmacy to hold a symposium on antibiotics during one of the sessions. There will also be a number of other papers in the Sections which will be of particular interest to hospital pharmacists.

Special events are also planned during the week and further details regarding the program will appear in the June issue of the *J. A. Ph.A., Pract. Pharm. Ed.*

Boston—Historical City

In addition to the attractions at the A.Ph.A. and ASHP meetings, Boston offers a wealth of historic places to see. Often referred to as the center of the Nation's cultural growth, it is truly one of the show places of America. It is the home of the Boston Symphony, a City of universities and colleges, and also the home of writers who have contributed to the early American literature such as Longfellow, Emerson, the Alcotts, and Thoreau.

Among the places of interest to see when visiting Boston is the Boston Common, site of the Boston Tea Party, Bunker Hill Monument, the U.S. Frigate Constitution at the Charlestown Navy Yard, Faneuil Hall—the Cradle of American Liberty, the First Church and Headquarters of the Christian Science Church, Benjamin Franklin's birthplace, the Granary Burying Ground, Old North Church, Old State House, Paul Revere's birthplace, the Old South Meeting House, the Adams' Houses, Longfellow's home, Plymouth, Concord and Lexington, Salem and Marblehead, Sleepy Hollow Cemetery and Longfellow's Wayside Inn.

MEETING DATES - 1954 and 1955

A.H.A.-APhA-ASHP Institute on Hospital Pharmacy—June 28-July 2, 1954, Storrs, Conn

American Pharmaceutical Association—August 22-27, 1954, Boston, Mass.

American Society of Hospital Pharmacists—August 23-24, 1954, Boston, Mass.

American Hospital Association—September 13-16, 1954, Chicago, Ill.

Maryland-District of Columbia-Delaware Hospital Association—November 8-9, 1954, Washington, D. C.

French Pharmaceutical Congress—October 4-9, 1954, Paris, France.

Pan-American Congress of Pharmacy—December, 1954, Sao Paulo, Brazil.

American Association for the Advancement of Science—December, 1954, San Francisco, Calif.

International Pharmaceutical Federation—September, 1955, London, England.

by GLENN SONNEDECKER

Secretary, American Institute of the History of Pharmacy

IN PHARMACY

PERSPECTIVES

This is the first of a series of informal columns of historical and social aspects of pharmacy written especially for THE BULLETIN. *The discussion this month rests largely on historical investigations that have been made by Edward Kremers, Sister Mary Francis Xavier, George Urdang, and W. O. Richtmann.*

FOR SALE

COPY OF

HOSPITAL FORMULARY

$1500

If you would like a copy of an outstanding hospital formulary I know where a good one may be had second hand for as little as $1500. This book was an American pioneer in the field, like the University Hospital Formulary at Michigan—although now somewhat more expensive!

The so-called *Lititz Pharmacopoeia* unearthed by a New York antiquarian appears to be the first copy on the market for decades; in fact, at the American Institute of the History of Pharmacy we know of only four others extant.

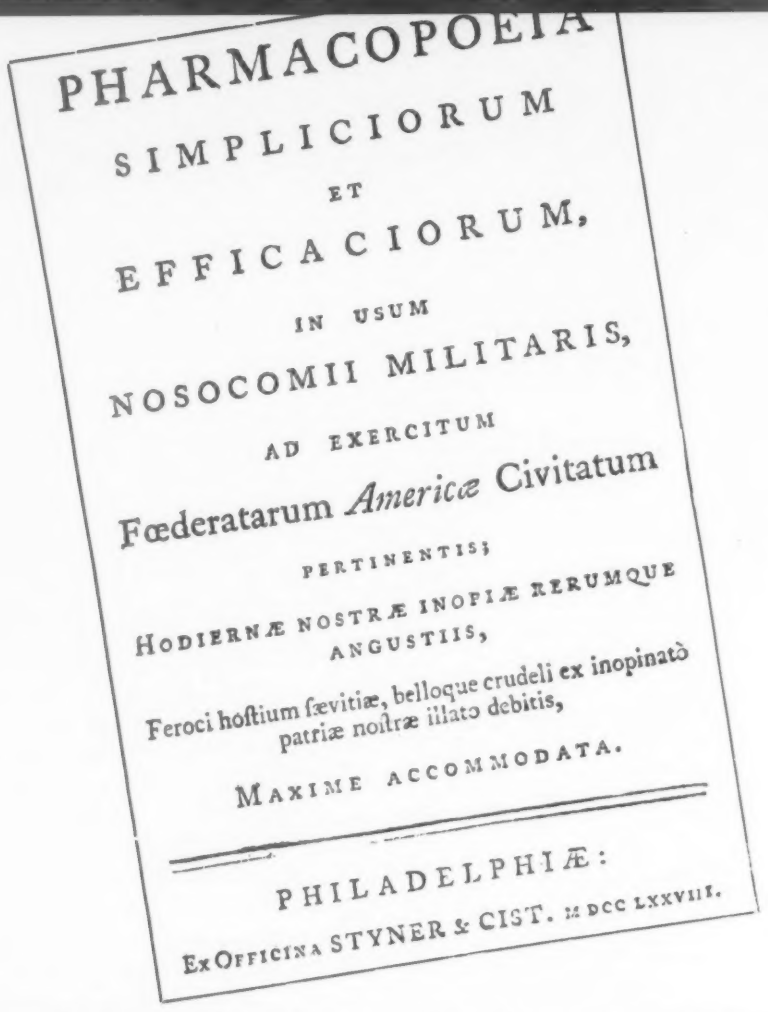
Dramatic and pressing circumstances gave birth to this little 32-page booklet in 1778. They resound in the title itself (translated from the Latin): "Formulary of simple and yet efficacious remedies for the use of the military hospital, belonging to the army of the federated states of America. Especially adapted to our present poverty and straitened circumstances, caused by the ferocious inhumanity of the enemy, and the cruel war unexpectedly brought upon our fatherland."

These were dark days for the Revolutionary cause. Washington had pulled the battered remnants of his army back to Valley Forge for the winter. At the nearby communal Moravian settlements of Bethlehem and Lititz, Penna., he converted dormitories into emergency hospitals. Wagonloads of the wounded quickly filled all rooms, then the halls. Here—amid the groans, curses and prayers of the colonist turned soldier—the now famous hospital formulary came into being.

Who wrote it? The title page shows no author; but probably most of the work was done by the Scottish-American physician, William Brown, whose name appears on the second edition (1781). This 30-year-old Physician General of the Middle Department (between the Hudson and Potomac) completed the manuscript, at least, while at the improvised hospital in Lititz.

The formulary no doubt reflects Dr. Brown's education at the renowned Edinburgh medical school, as well as the general influence of Scottish and English pharmacopoeias on early American pharmacy. He seems to have drawn most frequently from the Edinburgh pharmacopoeia, to a lesser extent from the London pharmacopoeia and formularies of the Royal Hospital of Edinburgh and Portuguese (Lusitan) Hospital of London. Yet about half the formulas apparently spring from American experience, plus the necessities of war-born shortages. The thin purse and uncertain supply of Washington's army gave preference to drugs that were simple, cheap, and available.

Glenn Sonnedecker



PHARMACOPOEIA
SIMPLICIORUM
ET
EFFICACIORUM,
IN USUM
NOSOCOMII MILITARIS,
AD EXERCITUM
Fœderatarum *Americæ* Civitatum
PERTINENTIS;
HODIERNÆ NOSTRÆ INOPIÆ RERUMQUE ANGUSTIIS,
Feroci hostium sævitiæ, belloque crudeli ex inopinatò patriæ nostræ illato debitis,
MAXIME ACCOMMODATA.
PHILADELPHIÆ:
EX OFFICINA STYNER & CIST. M DCC LXXVIII.

When shelf jars remained unfilled the apothecary might fill the gap with certain officially permitted substitutes listed in the formulary. Similar *quid pro quo* lists appeared in early European pharmacopoeias—for similar reasons—and the custom may be traced back to Roman times.

We also notice that a number of formulas are starred in the *Lititz Pharmacopoeia.* For these drugs the apothecaries of the Continental army depended upon manufacturing facilities of a "general laboratory," instead of making them in the hospital dispensary. This officially recognizes large-scale drug manufacture in America for the first time, as far as we know.

The Revolutionary apothecary (Attention, McCarthy!) would have stocked 48 vegetable simples, 28 inorganic substances, and 7 simples of animal origin to compound the hundred preparations in the Lititz formulary. Eighty-four preparations were for internal use, 16 for external use. From the formulas on these yellowed pages the curious hospital pharmacist can conjure up a picture of his early American counterpart at work; but for that he must be referred to the formulary itself or the English translation by Edward Kremers and Sister Mary Francis Xavier.

Was this, as some say, "the first American pharmacopoeia?" The title in Latin includes the word pharmacopoeia, undoubtedly for the first time on an American publication. But earlier unpretentious hospital formularies of Europe likewise used the term. While the Lititz publication became "official" in a sense for the Continental army, neither its appearance nor purpose testifies to any general pharmacopoeial ambitions. And there are no links with the first *U.S.P.* that appeared more than a half century later.

Rather we may see here a famous forerunner of modern hospital formularies, growing out of particular and desperate needs in that bleak year of 1777-78, when Apothecary-General Andrew Craigie referred to the medical department as "chaos." Like all hospital formularies its aim, as Dr. Brown put it, was for "expedition and accuracy in performing the Practice, and also to introduce a degree of uniformity therein . . ."

For a Latin facsimile, English translation, and commentary by Edward Kremers and Sister Mary Francis Xavier, with a supplement by George Urdang, see *Documents Pertaining to the Medicinal Supplies Within the North American Colonies from 1643 to 1780,* American Institute of the History of Pharmacy, 1944 (out of print); see also the discussion in Kremers-Urdang, *History of Pharmacy,* pp. 217-221.

CURRENT LITERATURE

edited by SISTER MARY ETHELDREDA, *St. Mary's Hospital, Brooklyn, N.Y.*

American Professional Pharmacist

MARCH, 1954—"Sterile Intravenous Fluids and Their Cost", by George L. Phillips, Assistant Chief Pharmacist, University Hospital, Ann Arbor, Michigan. A summary of a current cost study made in a larger institution which may be used as a guide for other hospital pharmacy evaluations.

page 260

"Narcotic Control in Hospitals". A brief presentation of the Regulations No. 5 Bureau of Narcotics, Department of the Treasury as directly related to hospitals. Authoritative interpretations of these regulations are cited.

page 264

APRIL, 1954—"Problem Forum". Comment of questions presented by various hospital pharmacists at national meetings and in individual letters to the hospital pharmacy forum editor.

page 354

Hospital Management

MARCH, 1954—"Speeding Up Dispensing Service", by William R. Collins. Describes the pre-packaging and delivery service at the new hospital pharmacy dispensing unit of the University of Illinois Research and Educational Hospital.

page 78

APRIL, 1954—"How to Control Sales Exhibits in the Hospital" by Dean Friesner, Chief Pharmacist, Miami Valley Hospital, Dayton, Ohio. Describes the procedures and regulations which this hospital established to provide a uniform and undiscriminatory method for the management of hospital displays, and to facilitate their arrangement. *page 84*

Hospital Progress

APRIL, 1954—"A Simple Narcotics Control System for the Small Hospital", by Sister Mary Cecelia, S.S.M., St. Mary's Ringling Hospital, Baraboo, Wisconsin. Describes a workable plan for controlling narcotics. *page 84*

MAY, 1954—"How Pharmacists Can Give a Helping Hand to Nursing Service" by Sister M. Gerald, C.S.J., St. Joseph's Hospital, Guelph, Ontario, Canada. Describes the many opportunities for hospital pharmacists to help fulfill the objective of the hospital in providing better patient care.

page 98

Hospitals

MARCH, 1954—"Specific for Employee Hypertension", by Sister M. Rosina, O.S.F., R.N. An unusual metaphorical presentation of treating personnel friction or promoting better personnel relationship. *page 78*

"Legal Aspects of Purchasing". By John G. Williams. The first part of a two-part article discussing agreements between buyer and seller, purchase orders, terms of price, delivery and payment.

page 108

APRIL, 1954—"Legal Aspects of Purchasing", by John G. Williams. This second part points out the important factors to be considered in the fulfillment of business agreements.

page 97

"A Pharmacy for the Small Hospital", by J. R. Cathcart. Presents some figures and material to aid administrators in making decisions concerning their pharmacy policy.

page 106

MAY, 1954—"Inadequacies of Hospitals in Meeting Accreditation Requirements", by Gaylord R. Hess, M.D. Dr. Hess field surveyor for the American Hospital Association in this article, tells his impressions of complimentary and service divisions in 170 hospitals he visited in 1953, and points out deficiencies. Common pharmacy deficiencies described. *page 94*

Modern Hospital

MARCH, 1954—"Prevailing Practices on Drug Inventories", by Daniel L. Drosness. A very informative and sound study of inventory turnover as related to the use of a hospital formulary and the conclusion derived from current pattern of medical prescribing in relation to the annual turnover rate and inventory standard per active hospital bed. *page 106*

APRIL, 1954—"Laboratory Control of Antibiotic Therapy", by Milton Goldin and I. Davidsohn, M.D. Describes the antibiotic sensitivity test and its important role in the diagnosis and management of infectious diseases. *page 92*

MAY, 1954—"Local Anesthetics", Harry L. Williams, M.D. a good presentation and tabulation of dosage, concentration and uses of local anesthetics. *page 100*

PHOTOS: *Panel on "Administrative Problems in a Hospital Pharmacy" —Registrants at Sixth Annual Hospital Pharmacy Seminar — Panel on "Coordination of Medical and Pharmaceutical Services in Hospitals" — Seminar in Session in College of Pharmacy Library.*

TEXAS SEMINAR

by WILLIAM E. WOODS

APPROXIMATELY 80 hospital pharmacists from Texas, Oklahoma, Louisiana, and Arkansas attended the University of Texas Sixth Annual Hospital Seminar in Austin, Texas on Saturday and Sunday, March 20 and 21, according to William E. Woods, Chairman of the Seminar and Director of the University Pharmacy Extension Service.

The Seminar was conducted by the College of Pharmacy and the Division of Extension in cooperation with the Texas Society of Hospital Pharmacists. The program was tailored to meet the professional and administrative needs of hospital pharmacists, administrators, and allied groups. The meeting consisted of a systematic presentation of lectures and training which would promote an overall, well-balanced, and properly integrated hospital care program for local communities.

The two featured speakers during the two-day Seminar were Allen V. R. Beck, Chief Pharmacist at the University of Indiana Medical Center, Indianapolis, Ind., and President of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS; and Grover C. Bowles, Chief Pharmacist of Strong Memorial Hospital, Rochester, N. Y., and immediate Past-President of the ASHP.

In stressing hospital pharmacy objectives, Mr. Beck outlined the ASHP program aimed toward improving pharmaceutical service to the patient on an economical basis. These programs are closely co-ordinated with other hospital and medical groups concerned with interprofessional problems. He announced that work has begun on the development of a "Hospital Pharmacy Manual of Operations."

Mr. Bowles admitted that the title of his presentation "A Practical Approach to Manufacturing in Hospital Pharmacy" was misleading and suggested that perhaps the term "Bulk Compounding" would be more correct. He emphasized that bulk compounding programs should be inaugurated only after a careful study of needs and costs since the two major reasons supporting the programs are added service and economy. "Products commercially available should be prepared only when a product of equal or better quality can be produced at less cost," stated Mr. Bowles. The bulk compounding program should be further limited to the quantity that will be used within a three month period.

Mr. Tol Terrill, Administrator, West Texas Shannon Memorial Hospital, San Angelo, Texas, and a Trustee of the American Hospital Association, prompted a lively discussion with his speech on "Pharmacy and Central Supply Combination." Having successfully adopted such a program, he urged other hospitals to investigate the economies of such a combination for their institutions. He also pointed out that advantages accrue to hospitals in this set-up from the scientific and academic training previously gained by the pharmacist.

Another favorite of the registrants was Miss Anna Laura Cole, Director of Nursing Services at Scott and White Memorial Hospitals, Temple, Texas. In her talk on "Obligations and Responsibilities of Pharmacists and Nurses," Miss Cole declared that it is imperative for the efforts of all hospital personnel be effectively combined. She recommended that "the pharmacist assume more responsibility in his obligation to patients by working more closely with the department of nursing in establishing more adequate methods of disseminating information on new drugs."

A former graduate of the University of Texas College of Pharmacy, Dr. Hugh H. Hanson presented a paper on "Present-Day Status of Anticoagulants." Dr. Hanson is a Diplomat of the American Board of Internal Medicine, and Clinical Instructor in Medicine, Baylor University School of Medicine. He asserted, "The presence of these potent agents implies the responsibility assumed by the dispenser." Anticoagulant agents are today our greatest weapon against thromboembolic disease, he stated, but they are potentially dangerous drugs and the pharmacist should keep available the antagonist of choice for each anticoagulant agent.

Another scientific highlight of the Seminar was a speech on "New Therapeutic Agents for the Treatment of Cancer," by Dr. J. B. Trunnell, Head of the Section of Experimental Medicine at M. D. Anderson Cancer Research Hospital, Houston, Texas. His treatment of the subject divided the agents into two major categories: radioactive isotopes and chemotherapeutic agents.

Important and currently interesting panel discussions stimulated consideration of many practical problems in hospital pharmacies. The two featured panels, both composed of hospital specialists and authorities from Texas and other states, pinpointed discussion of "Administrative Problems in a Hospital Pharmacy" and "Coordination of Medical and Pharmaceutical Services in Hospitals."

WILLIAM E. WOODS is Director of the Pharmacy Extension Service, The University of Texas College of Pharmacy, Austin, Texas.

INTERNSHIPS AND RESIDENCIES
in hospital pharmacy completed

Anthony F. Aiello

will receive the Master of Science degree with a major in hospital pharmacy under the joint program sponsored by the Veterans Administration and the University of Southern California. Born in New York, August 8, 1914, Mr. Aiello entered the field of pharmacy after having served in the army from 1941 through 1945. He received the Bachelor of Science degree in pharmacy from Fordham University in 1949. Mr. Aiello was employed at various retail pharmacies as an apprentice, becoming registered in New York in 1950. He was subsequntly employed by The Canis Pharmacy and The Eimer and Amend Apothecary in New York, as a prescription pharmacist. He holds membership in the American Pharmaceutical Association, the ASHP, the local hospital pharmacy organization, and the Fordham Alumni.

Wesley R. Gladhart

will complete the graduate studies and internship in hospital pharmacy offered as a joint program by the University of Maryland and The Johns Hopkins Hospital in June 1954. He was born in White Cloud, Kansas on May 13, 1930 and became associated with pharmacy while in high school in Hiawatha, Kansas. Mr. Gladhart, born and reared on a farm, graduated from the School of Pharmacy, University of Kansas in August 1952, with a Bachelor of Science degree. His thesis, which will fulfill the requirements for a Master of Science degree, concerns an evaluation of bacteriostatic agents for use in multiple dose vials sterilized by autoclaving. He is a member of the American Pharmaceutical Association, the ASHP, the Maryland Association of Hospital Pharmacists and Rho Chi Honorary Pharmaceutical Society.

William H. Strohbeck Jr.

will complete the internship inaugurated by the Veterans Administration at the James Wadsworth Hospital, West Los Angeles, California, and will receive a Master of Science degree in Pharmacy with his major in hospital pharmacy from the University of Southern California College of Pharmacy. His thesis is entitled "The Chemical Disinfection of Oral and Rectal Fever Thermometers." Mr. Strohbeck was born in Louisville, Kentucky, and attended the St. Xavier High School, and University of Kentucky College of Pharmacy where he received the Bachelor of Science degree in pharmacy in June 1950. He is registered in the state of Kentucky, and has had pharmaceutical experience in the retail and hospital field. He holds membership in the ASHP, the American Pharmaceutical Association, the Southern California Society of Hospital Pharmacists Chapter, Rho Chi Honorary Pharmaceutical Society, and Phi Delta Chi Pharmaceutical Fraternity. He served with United States Army Air Forces during World War II.

John Ray Marvel

is a candidate for the Master of Science degree in pharmacy from the Philadelphia College of Pharmacy and Science and a certificate as pharmacy intern from the Jefferson Medical College Hospital in June, 1954. Mr. Marvel was born in Wilmington, Del. and attended the Philadelphia College of Pharmacy and Science, receiving the Bachelor of Science degree in pharmacy "with merit" in 1952. He is registered in Delaware and Pennsylvania. After completion of the internship program, he plans to continue further education at a midwest university. He is a member of Rho Chi, Phi Delta Chi, the A.Ph.A., the ASHP, and the Philadelphia Hospital Pharmacists' Association.

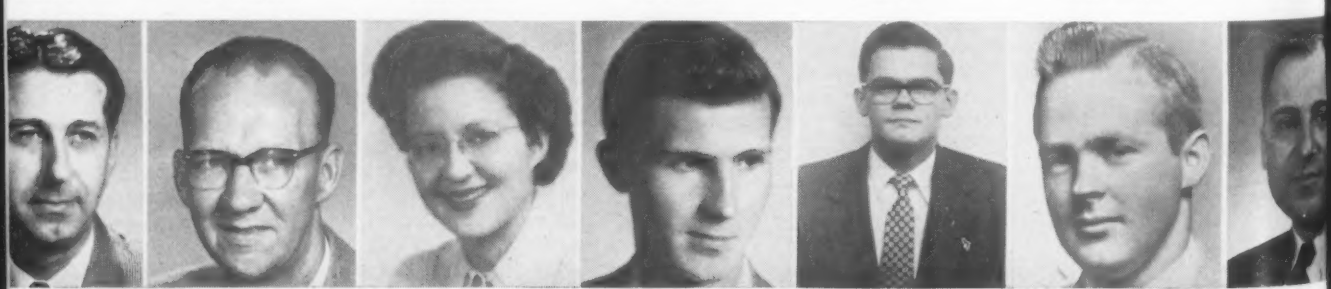
Tarsis Hernandez

will complete the joint program of internship offered by The Johns Hopkins Hospital and graduate studies at The University of Maryland in June, 1954. Miss Hernandez is a native of New York, born in 1923. She holds a Bachelor of Arts degree from Hunter College of the City of New York and a Bachelor of Science degree from Columbia University College of Pharmacy. She is a member of the American Pharmaceutical Association, the ASHP, the Maryland Association of Hospital Pharmacists, and Rho Chi Honorary Pharmaceutical Society.

Edward Allen Hartshorn

is a candidate for the Master of Science degree in pharmacy from the Philadelphia College of Pharmacy and Science and a certificate as pharmacy intern from the Jefferson Medical College Hospital. Born in Cleveland, Ohio, Mr. Hartshorn enlisted in the U.S. Army Air Corps in 1944. He attended Gettysburg College, Western Reserve University School of Pharmacy and the Philadelphia College of Pharmacy and Science, graduating from the latter "with distinction" in 1952. Mr. Hartshorn has contributed several articles to the literature including "A Review of Preservatives Used in Parenterals," and "Formulas Widely Used in Hospitals and Recommendations For Their Standardization." Mr. Hartshorn is a member of Rho Chi, the A.Ph.A., the ASHP and the Philadelphia Hospital Pharmacists' Association.

Aiello *Strohbeck* *Hernandez* *Gladhart* *Marvel* *Hartshorn* *D'Amb*



Joseph Vincent D'Ambola

will receive the certificate as intern in pharmacy from Jefferson Medical College Hospital in August 1954. He attended Rutgers University College of Pharmacy, receiving the Bachelor of Science degree in 1952. He is registered as a pharmacist in New Jersey. Mr. D'Ambola also attended the University of Pennsylvania's Wharton School of Business Administration. He served in the U.S. Army from 1941 until 1946 when he was discharged with the rank of Major. He is a member of the American Pharmaceutical Association, the ASHP, the Philadelphia Hospital Pharmacists Association, and Kappa Psi.

Benjamin Kaufman

will complete the requirements for the Hospital Pharmacy Residency Certificate and the academic credits for the Master of Science degree in September, 1954. Mr. Kaufman was born in 1925 and after formal education, entered Columbia University College of Pharmacy. He completed the undergraduate requirements in 1949 after a 26 month interim in the U.S. Navy, where he served as a Pharmacist Mate. He became registered as a pharmacist in 1949 in the State of New York where he practiced in retail stores. He was appointed to the hospital pharmacy residency in September, 1952, obtaining the hospital training at the Veterans Administration Center, Wadsworth Hospital, Los Angeles. He attended graduate school classes at the University of Southern California College of Pharmacy. He is also licensed in the State of California. Mr. Kaufman is a member of the A.Ph.A., the ASHP, and the Southern California Society of Hospital Pharmacists.

John W. Hester

will receive his Master of Science degree in pharmacy in June, 1954 upon completion of a program of graduate study and internship in hospital pharmacy offered jointly by the University of Michigan Horace Rackham Graduate School and the University of Michigan Hospital. Mr. Hester, a native of Indiana, was born in October, 1922. He received his Bachelor of Arts degree in Chemistry from Marion College, Marion, Indiana in June, 1947, and his Bachelor of Science degree in Pharmacy from Butler University College of Pharmacy in June, 1950. Mr. Hester taught compounding procedures while on the staff of Butler University College of Pharmacy from September, 1950, to June, 1952. As a senior intern he has also acted as a teaching assistant for the University of Michigan. Mr. Hester served as a Lt. (j.g.) in the U. S. Navy during World War II. He is a registered pharmacist in Indiana as well as Michigan and has had experience in both retail and manufacturing fields of pharmacy. He holds membership in the American Pharmaceutical Association, the ASHP, the Michigan Society of Hospital Pharmacists, and the Indiana Pharmaceutical Association.

Amalia Heaton

will receive a Master of Science degree in pharmacy this June after completing the joint program of graduate study and internship in hospital pharmacy offered by the University of Michigan. She was born in Bellville, Texas, and attended the University of Houston, receiving her Bachelor of Science degree in pharmacy in June, 1952. At graduation, she was one of the two senior recipients of the Merck award. Miss Heaton is a member of the ASHP, the American Pharmaceutical Association, Michigan Society of Hospital Pharmacists, Rho Chi Honorary Pharmacuetical Society, and Lambda Kappa Sigma pharmaceutical sorority.

Robert L. Lantos

will receive a Master of Science degree in hospital pharmacy from the graduate school of the University of Michigan in June, 1954. His internship training was done at the University of Michigan Hospital. He also received his Bachelor of Science degree in pharmacy from the University of Michigan in 1952. Mr. Lantos was born in Johnstown, Pennsylvania in June 1930. He is a registered pharmacist in Michigan and Pennsylvania, and is a member of the American Pharmaceutical Association, the ASHP, the Michigan Society of Hospital Pharmacists, the International Federation of Pharmacy, and the Rho Chi Honorary Pharmaceutical Fraternity. An article on the subject of drug charges in hospitals by Mr. Lantos appeared in the April, 1953 issue of the **American Professional Pharmacist.**

John G. Moir

will receive the degree of Master of Science in pharmacy in June, 1954 from the University of Michigan. A native of Canada, he attended Victoria College, Victoria, B.C. and the University of British Columbia, Vancouver, B.C., receiving the Bachelor of Science degree in pharmacy from the latter institution in 1950. During 1946-1947 he served a year of practical pharmacy training at the Royal Jubilee Hospital, Victoria, B.C. In 1950 he joined the staff of the Faculty of Pharmacy of the University of British Columbia, and for the 1951-1952 session was appointed Lecturer in Pharmacy. Mr. Moir attended the 15th General Assembly of the International Pharmaceutical Federation in Paris, France, in 1953 when he represented the Canadian Society of Hospital Pharmacists. He is a member of the American Pharmaceutical Association, the ASHP, the International Pharmaceutical Federation, the British Columbia Pharmaceutical Association, the Canadian Society of Hospital Pharmacists, and the Canadian Conference of Pharmaceutical Faculties. He is also a member of Rho Chi Honorary Pharmaceutical Society and Lambda Chi Alpha fraternity.

Wendell T. Hill, Jr

senior pharmacy resident at the Veterans Administration Center Los Angeles, California, is a candidate for the Master of Science degree in pharmacy, from the University of Southern California in June 1954. He is one of four pharmacists selected by the Veterans Administration to participate in the pilot Veterans Administration Pharmacy Residency Program initiated in September 1952. Mr. Hill was born December 1924 in Philadelphia, Pennsylvania. He completed high school in Palmyra, New Jersey in 1942, and served with the armed forces during World War II. He received his Bachelor of Science in pharmacy from Drake University in 1950, then spent two years in the retail field. Mr. Hill is married and has a son twenty months old. He is a member of the American Pharmaceutical Association, the ASHP, and the Southern California Society of Hospital Pharmacists.

Kaufman *Hester* *Heaton* *Lantos* *Moir* *Hill*

therapeutic TRENDS

edited by LEO F. GODLEY

Coconut Water As Intravenous Fluid

In certain undeveloped countries where intravenous solutions are not conveniently available, it has been suggested that if coconuts are indigenous to that area that the water from the green coconut be used as a substitue.

The water is collected aseptically and filtered through sterile gauze. The water may be autoclaved in the usual manner or given immediately without autoclaving. In this study, reported in *Arch. Surg. 68*:167 (Feb.) 1954, 21 patients received a total of 26 infusions of coconut water. The volume of the infusion ranged from 300 to 550 cc. No serious reactions were encountered.

The constituents of coconut water have been determined. It contains a mixture of dextrose and fructose totaling about five percent. There is a small amount of protein present, also inorganic ions of calcium, magnesium, potassium, sodium, chloride, and phosphate. Potassium is present to the extent of 49 mEq./liter which, of course, might possibly be undesirable. A method for administering to ascertain coconut sensitivity of the patient is described.

Hyatin Methiodide A New Curariform Drug

Pradhan and De reported on the pharmacology of Hyatin Methiodide in *Brit. J. Pharmacol.* 8:399 (Dec.) 1953. This curare-like alkaloid is a constituent of the root of the plant *Cissampelos pareira*. The curariform activity of this alkaloid in experimental animals is from 1.14 to 2.13 times greater than with d-tubocurarine. Like d-tubocurarine, Hyatin methiodide has a low margin of safety and is antagonized by neostigmine.

Pancreatic Dornase In Bronchial Disease

Pancreatic Dornase (pancreatic desoxyribonuclease) was used as an aerosol in the treatment of 35 patients with chronic bronchial asthma, atelectasis, pneumonia, chronic pulmonary emphysema, bronchiectasis, and lung abscess. Dosages used were 50,000 to 100,000 units one to three times a day for one to six days. A bronchodilator was used where indicated.

No undesirable reactions were noted and beneficial results were reported in most cases within an hour after treatment. Best results were noted in patients with a large amount of tenacious mucous in the bronchial apparatus. The volume of expectorated sputum was two to three times more than the control volume for a 24 hour period. This sputum which was thick and gelatinous at first, became thin and lost its green or yellow color. There was a marked decrease in pus cells and cellular elements.

Subjective improvement was usually noted after the first treatment and clinical improvement was obvious usually after one to two days therapy.

This study was conducted at Boston City Hospital and reported in *Ann. Allergy* 12:71 (Jan.-Feb.) 1954. The pancreatic dornase was supplied by Sharp and Dohme.

Chloramphenicol Safety Limits

Hodgkinson of the Department of Clinical Investigation of P.D. & Co. in London reported in *Lancet 1*:285 (Feb. 6) 1954 that his company had received reports of 28 cases of aplastic anemia and three cases of granulocytopenia associated with chloramphenicol therapy that had occurred in the British Isles.

It was noted that in 24 of these 31 patients that the dose was more than twice the maximum considered necessary to control most infections and four times the amount usually employed. In two other cases, therapy was continued for more than 24 days although the dose was not excessive.

This author makes the following recommendations relative to chloramphenicol therapy: (1) in

adults, total dosage should not exceed 25 Gm.; (2) in children, the total dose should not exceed 100 mg./kg./day for 7 days; and (3) chloramphenicol therapy should not be continued for more than 10 days.

Maklua In Treatment For Hookworm

Maklua is the name which designates the berries from the plant *Diospyros mollis* indigenous to Thailand. These berries have long been used by the local herb doctors in the treatment of intestinal diseases and for the past 20 years physicians of the country have employed them in the treatment of helminthic infections.

According to these investigators of the Thai Ministry of Public Health this study which was reported in *J. Parasitol. 40* (Feb. 1954 is the first published results obtained with this drug.

A series of 72 patients were given a single oral dose of the berries crushed in coconut milk. Low egg counts about 90 days after treatment proved that human hookworm infection can be effectively treated with a single dose of Maklua. Purgation is unnecessary after use of this drug and the effectiveness is markedly reduced if the berries are not green and used soon after they are collected.

Untoward results in a very few patients consisted of mild cases of nausea, vomiting, and diarrhea. It was noted by these investigators that a single dose of Maklua was superior to a single dose of hexylresorcinol in the treatment of hookworm infection.

Chlorpromazine

A report on the use of chlorpromazine as an inhibiting agent in psycomotor excitement and manic states was published in *Arch. Neurol Psychiat. 71*:227 (Feb.) 1954. Chemically, this drug is 3-chloro-10 (3-dimethylaminopropyl) pentothiazine HCl.

A four-month clinical trial on a series of 71 psychiatric patients using a daily dose of from 50 to 800 mg. established the fact that chlorpromazine is of considerable value in psychiatry. It renders the patient quiet and accessible and results obtained with manic depressive patients have been gratifying in comparison to results from electro-convulsive therapy.

Also appearing in *J. Pharm. & Exper. Therapeutics 110*:86 (Jan.) 1954 was a report on this drug with respect to its activity as an anti-emetic in laboratory animals. Its activity suggests a selective depression of the medullary area that controls emesis. Similar results were published by another group of investigators in *Canada Med. Assoc. J. 70*:276 (March) 1954. The results obtained in humans in this latter study indicate that the drug has a powerful anti-emetic effect that may last for hours or days depending on the size dose. Other pharmacological actions noted were: sedation without hypnosis, moderate adrenolytic activity, mild antihistaminic effect.

Companies supplying the drug for the above studies were Smith, Kline & French of Philadelphia (Thorazine); and Poulenc, Ltd. of Montreal (Largactil).

Hydrocortisone For Aphthous Ulcers

Bergman used hydrocortisone acetate ointment on aphthous ulcers in a series of 17 patients. The lesions, in the main, were small and characteristic having a yellowish depressed center and a bright red hemorrhagic border. The study was reported in *Dental Digest 60*:60 (Feb.) 1954.

Hydrocortisone Acetate Ointment one percent or two and one-half percent in petrolatum was applied to the ulcer every two hours. Fifteen cases responded promptly to the treatment. One of the failures was probably due to lack of cooperation.

Liquid Nitrogen For Trichophyton Rubrum

Eight applications of liquid nitrogen to lesions of trichophyton rubrum infection were made over a period of about five months. This was done after standard treatment failed to give relief. The severe itching disappeared soon after the first application and there were no scars. This report appeared in *Arch. Dermatol. and Syphilol. 69*:364 (March) 1954.

Cortisone For Herpes Zoster

Gelfand in New York reported in *J. Am. Med. Assoc. 154*:911 (March 13) 1954 a study of a series of five patients with severe acute herpes zoster who were treated with orally administered cortisone. Dramatic relief was experienced in four of these patients within 24 to 36 hours. The skin eruptions did not progress and secondary infections did not develop. The superficial lesions, however, healed in the usual manner requiring one to three weeks. Pain returned after cortisone was withdrawn in only one case but did not return after another week of treatment.

The following dosage routine was used: 200 mg. the first day, then 100 mg. daily for seven days, then 50 mg. daily for four days. There were two patients with ophthalmic involvement who received cortisone ophthalmic suspension locally. No side effects were encountered in this study.

timely drugs

ASF

. . . (anti-stress formula) is the name given to a vitamin preparation marketed by the J. B. Roerig and Co. The formula is based on the recommendations of the Committee on Therapeutic Nutrition of the National Research Council. Each ASF capsule contains thiamine mononitrate, 10 mg.; riboflavin, 10 mg.; niacinamide, 100 mg.; pyridoxine hydrochloride, 2 mg.; calcium pantothenate, 20 mg.; ascorbic acid, 300 mg.; vitamin B_{12} activity, 4 mcg.; folic acid, 1.5 mg.; and menadione (vitamin K analog), 2 mg. The recommended dosage is two capsules daily in acute stress situations, such as operative procedures and severe pathologic conditions; and one capsule daily for maintenance in convalescence.

Biomydrin Otic

. . . an effective preparation against both otitis media and otitis externa, has been released in a new plastic dispenser by Nepera Chemical Co., Inc. The plastic drop dispenser contains one-half ounce and can deliver one drop at a time. Biomydrin Otic contains gramicidin, neomycin, thonzylamine hydrochloride and the wetting agent, Thonzonium Bromide, in an aqueous isotonic solution having a *p*H of 6.2.

Chloromycetin For Injection

. . . is an intravenous form of Chloromycetin primarily intended for intravenous use. It is intended as a temporary emergency measure for patients unable to take the antibiotic by mouth, and should be discontinued in favor of one of the oral Chloromycetin products as soon as the patient's condition permits. The intravenous form is therapeutically effective over the same wide range of clinical entities which have been found to respond favorably to Chloromycetin when given by the oral route. Chloromycetin is a product of Parke, Davis and Company, and is supplied in ampuls containing 0.5 Gm. of the antibiotic. An ampul of 50 percent solution of N,N-Dimethylacetamide is supplied with each ampul of Chloromycetin for use in preparing the solution for injection.

Choledyl

. . . has been introduced by the Nepera Chemical Company for use in oral theophylline therapy. It is the theophylline salt of choline. Choledyl is indicated for planned diuresis, prolonged coronary vasodilation, continued relief of bronchospasm, and for relief and prevention of premenstrual tension. It has five times the solubility and produces 76 percent higher blood levels than does oral aminophylline. Gastrointestinal irritation is minimized. Choledyl allows for intensive, effective, day to day oral theophylline medication. It is well tolerated even in prolonged administration thus producing better clinical results. The prescribed dosage can be adjusted to individual requirements. For adults, the initial dosage is 200 mg., four times daily, and for children over six years, 100 mg. three or four times daily.

Dactil

. . . is a new preparation which has been found clinically effective in relieving pain and spasm within minutes while relaxing the viscus and permitting it to act normally. Dactil is said to be specific for upper gastrointestinal pain and spasm including cardiospasm, gastroduodenal spasm, biliary spasm, pylorospasm, and gastro neurosis and irritability. It has an action distinct from the "antispasmodics" which tend to produce an inert viscus with consequent side effects.

According to the clinical reports, Dactil acts rapidly, usually within ten minutes, and it does not interfere with the normal action of the smooth muscle of the gut, and is well tolerated. In one study of 160 patients, 94.1 percent of the cases had no side effects. Thus far, an average of 80 percent of the patients in all series of studies have been benefited.

Dactil, a product of Lakeside Laboratories, is available in two forms—plain orange capsules containing 50 mg. of Dactil, and orange and white capsules which contain 16 mg. of phenobarbital plus the Dactil. The usual dosage is 50 mg. four times daily.

Dynolen

. . . is a vitamin preparation available from the Wm. S. Merrell Company. Supplied in capsule form, it contains betaine, glycine, folic acid, pyridoxine, vitamin B_{12}, intrinsic factor, and ascorbic acid.

Fasigyn

. . . a combination of 2.5 mg. of estradiol benzoate and 12.5 mg. of progesterone in one ml. of sesame oil, is indicated in habitual abortion and functional secondary amenorrhea. Fasigyn is supplied in 10 ml. multiple dose vials and one ml. Steraject cartridges for deep intramuscular injection. It is a product of Pfizer Laboratories.

Femandren Linguents

. . . provide combined estrogen-androgen therapy for use in the menopause, osteoporosis, and geriatrics. Femandren, a product of Ciba Pharmaceutical Products, Inc., is the first such combined product to offer methyltestosterone and ethinyl estradiol, in the form of Linguets, for buccal absorption. The combination therapy as well as the fact that it is available as Linguets, offers certain advantages over other hormone preparations.

Furadantin Pediatric Suspension

. . . is a new dosage form of Furadantin for the treatment of young children with urinary tract infections. The suspension contains 5 mg. of Furadantin per ml. suspended in a water-miscible gel containing alcohol, 10 percent. The highly viscous gel prevents settling of the Furadantin crystals. According to the clinical reports, cures of the urinary infections were amazingly high when using Furadantin. In a series of 43 pediatric cases, both acute and chronic, there were only two cases which did not respond at all.

Furadantin Pediatric Suspension is supplied as a yellow, coconut flavored, highly palatable thixotropic gel, by Eaton Laboratories.

Ilidar

. . . is a new adrenolytic blocking agent for use in the treatment of vasospasm. Introduced by Hoffmann-La Roche Inc., this compound is said to be particularly useful in the symptomatic relief of circulatory conditions characterized by aching, coldness, tingling and numbness of the extremities. It is a dibenzazepine derivative. Ilidar has a fourfold therapeutic effect in vasospasm. It causes dilation of the peripheral blood vessels by sympatholytic and adrenolytic action, by epinephrine reversal and by direct vasodilation. Ilidar Phosphate is available in 25 mg. coated tablets for oral use.

Lutrexin Tablets

. . . is the brand name for the protein-like uterine relaxing factor which has been isolated from the ovary. It produced highly favorable results in a series of 298 clinical cases of dysmenorrhea reported in the August (1953) issue of the *Am. J. Obstet. and Gynecol.* Best results have been obtained by initial doses of two to four tablets followed by two or three tablets every 3 or 4 hours if needed. No untoward symptoms have been reported even with single doses as high as 10,000 units. The preliminary reports indicated that Lutrexin may also be useful in threatened and habitual abortions. Lutrexin Tablets are available from Hynson, Westcott and Dunning, Inc.

Parenzyme (Intramuscular)

. . . is a suspension of the proteolytic enzyme trypsin in sesame oil supplied by The National Drug Company. The trypsin is extracted from beef pancreas and purified by a special crystallization process for parenteral use, insuring a uniform preparation of high potency. Parenzyme (Intramuscular) trypsin produces rapid, dramatic reduction of acute local inflammation in phlebitis, ocular inflammation, and traumatic wounds. It is also effective in the treatment of leg ulcers (varicose and diabetic). Parenzyme trypsin in oil is available in 5 ml. vials containing 5 mg. of crystalline trypsin suspended in each ml. of sesame oil.

Plexonal

. . . is a new hypnotic-sedative available from Sandoz Pharmaceuticals. Each sugar coated tablet contains sodium barbital, 45 mg.; sodium phenobarbital, 15 mg.; Sodium Sandoptal, 25 mg.; scopolamine hydrobromide, 0.08 mg.; and dihydroergotamine methanesulfate (D. H. E. 45), 0.16 mg. Plexonal is said to produce effective sedation without drowsiness.

Polycycline

. . . is Bristol's name for the new broad-spectrum antibiotic, tetracycline. Fewer side effects, greater solubility and increased stability resulting in more rapid absorption and prolonged high blood levels, are the advantages of tetracycline over other major broad-spectrum antibiotics.

Polycycline is supplied in 250 mg. capsules by Bristol Laboratories.

Suspension Co-Pyronil

. . . (Pyrrobutamine Compound, Lilly) has recently been made available by Eli Lilly and Co. The oral suspension extends the therapeutic usefulness of the Co-pyronil formula, making it available on prescription to patients of all ages, including infants, and offering great flexibility of dosage. In the suspension, the formula is a combination of long-acting Pyronil (pyrrobutamine) as the napthalene disulfonate with short-acting, rapidly effective Histadyl (thenylpyramine) and synergistically-acting Clopane Hydrochloride (cyclopentamine hydrochloride), both as the hydroxybenzoyl benzoate. The over-all acceptability of the Co-pyronil formula may be used as much on the fact that effective doses cause almost no side reactions as on the fact that in nearly all cases complete clinical relief from allergic symptoms is obtained.

Suspension Co-Pyronil is indicated for relief of allergic symptoms, especially nasal and ocular symptoms associated with hay fever and vasomotor rhinitis; and for treatment of urticaria, allergic spasm of the gastrointestinal tract, and angioneurotic edema. The suspenion has a coconut-vanilla flavor.

Synkayvite-C Drops

. . . is a new dosage form of vitamin K and ascorbic acid introduced by Hoffmann-La Roche Inc. This preparation is useful in guarding against post-tonsillectomy hemorrhage and promoting wound healing following tonsillectomy, nasal or oral surgery. Each ml. of Synkayvite-C Drops contains 5 mg. of Synkayvite (water-soluble form of vitamin K) and 200 mg. of vitamin C. The preparation is palatable, fruit-flavored and nonalcoholic, and thus is especially suitable for use in infants and young children. The drops may be mixed with milk or fruit juices, or dropped directly on the tongue.

Teldrin Spansule

. . . is a new antihistamine capsule providing twelve hours protection against allergies such as hay fever. Marketed by Smith, Kline and French Laboratories, Teldrin Spansule capsules offer advantages over other antihistamine products since they provide continuous relief over a prolonged period of time with only one oral dose. This is made possible by distributing the active ingredient, chlorprophenpyridamine maleate, among hundreds of tiny pellets with varying disintegration times. The drug is then uniformly released over a period of 8 to 10 hours, with a constant and sustained antihistamine effect lasting approximately 10 to 12 hours.

Teldrin Spansule capsules are also prescribed for relief of allergic rhinitis, urticaria, drug and serum reactions, insect bites, allergic eczema, asthma and other allergic disorders.

Wydase Solution

. . . in a new form has been announced by Wyeth Laboratories. It is now available in a stable form of hyaluronidase in solution which may be stored ready-to-use for as long as two years. Previously, Wydase was supplied only in lyophilized (frozen-dried) form which had to be reconstituted just before use and then the solution was stable only for about two weeks.

BOOK REVIEWS

THE SYMPTOMS AND TREATMENT OF ACUTE POISONING. By G. H. W. Lucas. 4½" x 7", 308 pages. Published by The Macmillan Company, New York. 1953. Price $4.00

Dr. G. H. W. Lucas, Professor of Pharmacology at the University of Toronto and codiscoverer of cyclopropane, apparently had pharmacists, as well as others, foremost in his thoughts when he wrote *The Symptoms and Treatment of Acute Poisoning*. In his own words, "It is so designed that the pharmacist, the nurse, and the layman may find in it sufficient information for emergency treatment of acute poisoning." The book presents up-to-date information, easily and quickly located, for many of the drugs most often involved in acute poisonings.

General considerations, suggested supplies and apparatus for emergency stock, emetics and gastric lavages, and collection and preservation of samples for analysis are adequately discussed. But of particular interest and usefulness is the chapter devoted to poisoning in children. Children, prone to sample whatever is within reach, are often unable to give helpful information as an adult might. In addition, treatment normally prescribed for adults, such as intravenous therapy, is often not applicable to young poison victims. Thus this chapter is of special value in the treatment of poisoning.

Another chapter pertains to a number of drugs and preparations suitable for emergency treatment of poisoning, together with their use, dose, mode of administration, contraindications, and other pertinent information. Approximately two-thirds of the book is devoted to cases of poisonings including fatal dose, manner of causing toxicity, whether internal or external, symptoms, and treatment. In this section will be found many commercial preparations under their trade names. Likewise, many common trade names will be found in the index, giving the page reference to the classification, such as the barbiturates.

This reference, *The Symptoms and Treatment of Acute Poisoning*, is an excellent addition to the library of the pharmacist who wants a quick answer in the event of a poisoning and not a complete text on toxicology.

JOANNE BRANSON

University Hospital
Ann Arbor, Michigan

PHARMACY AND MEDICINE IN OLD EDINBURGH. 1953. By C. G. Drummond. Paper bound booklet, 5½" x 8", 35 pages. Published by The Pharmaceutical Press, 17 Bloomsbury Square, London, W. C. 1, England. Price 2*s*.6*d* (post free).

A better title for his brochure would perhaps have been "An Old Edinburgh Prescription File," for the main theme in this 35-page booklet deals with an old collection of prescriptions dating back to the seventeen thirties and accidentally discovered in the course of altering an ancient Edinburgh building. These 18th century prescriptions are ably discussed in their historical contexts, with interesting commentaries on the prescribing physicians, patients and ingredients. The work is somewhat marred by the author's tendency to diffuse, but apart from some unnecessary digressions, Mr. Drummond has written an enjoyable and informative booklet, whose interest is enhanced by several fine photographic reproductions of the prescriptions he mentions. A good condensation of this brocure appeared in *The Pharmaceutical Journal* (*London*), *116*:137-138, Feb. 21, 1953.

ALEX BERMAN

Washington, D. C.

DERMATOLOGIC MEDICATIONS. 1954. By Marguerite Rush Lerner, M.D. and Aaron Bunsen Lerner, M.D. 4½" x 7", 183 pages. Published by The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, Illinois. Price $3.50.

In *Dermatologic Medication* Drs. Marguerite and Aaron Lerner have provided a compact, useful guide to dermatological preparations and treatments. It is not presented as a dermatologic textbook, nor is any attempt made to compile a comprehensive list of all drugs beneficial in skin diseases. The book is divided in two sections: therapeutic agents, and treatment regimens.

Part one lists the various therapeutic agents by classifications—anhidrotics; antipruritic lotions, liniments, and ointments; enzymic debridement; heat rash agents; insecticides and insect repellents; ointment bases and lubricating agents; and many others. Under each individual drug is included its chemical structure or composition, indication, mode of action, dose or directions for application, side effects, and availability. In some cases adjunct therapy is also given.

The second part of the book, treatment regimens, presents various procedures for treating some of the more common conditions such as acne vulgaris, chronic atopic dermatitis, lupus erythematosus, and others. Local and systemic regimens are outlined for the varying degrees of a condition. Alternative therapy is often described where recommended treatment is not convenient.

Dermatologic Medications offers an exceptionally up-to-date and useful reference tool for physicians and pharmacists alike.

JOANNE BRANSON

University Hospital
Ann Arbor, Michigan

BOOK NOTICES

DIRECTORY OF MEMBERSHIP OF THE RHO CHI SOCIETY. 1953 edition. 8¼" x 10¾", 59 pages. Published by Rho Chi Society at University of Wisconsin College of Pharmacy, Madison. Price $5.00.

The Rho Chi Society, honorary pharmaceutical society, has recently published a *Directory of Membership* consolidating all previously published directories and annual supplements up to June, 1953. The *Directory* includes past and present officers of the Rho Chi Society; the name and location of each chapter; and the name, chapter, and date of initiation of the more than 6,800 members of the Society. Individuals, institutions, and libraries may purchase this new *Directory of Membership of the Rho Chi Society* from the office of the Secretary-Treasurer of Society at Madison, Wisconsin.

PHARMACEUTICAL ARITHMETIC. By Ignatius J. Bellafiore. 7½" x 10½", 236 pages. Published by The C. V. Mosby Company, St. Louis, Mo. Third Edition, 1953. Price $4.50.

This book offers a complete course in everyday problems in dispensing, manufacturing and hospital pharmacy. The new edition has few additions but has been brought up-to-date in accordance with title changes in the U.S.P. and N.F.

PHARMACY QUIZ MANUAL. By Joseph A. Ortolan. 5½" x 8¾", 240 pages. Available from the author, Long Island University, Brooklyn College of Pharmacy, Brooklyn 16, N. Y. Second Edition 1953. Price $5.00.

Pharmacy Quiz Manual, prepared by a professor in pharmacy who was formerly an instructor in pharmacy in the U. S. Navy Medical Corps, is intended for use by pharmacy students and those taking the State Board examinations for registration as a pharmacist. It is intended to be supplemented with pharmacy textbooks as well as the official compendia.

NEW PERIODICAL

ACTA PHYTOTHERAPEUTICA. Published monthly with the exception of August and September by E. F. Steinmetz, Keizersgract 714, Amsterdam-C. Holland 6¼" x 8¼". Subscription Price $5.50 per year.

A new scientific journal on botanical medicine, *Acta Phytotherapeutica,* appeared in January 1954. The publication is a modest one, to be issued monthly with the exception of August and September. The subscription price for the ten issues each year is $5.50, and the publisher is E. F. Steinmetz, Keizersgracht 714, Amsterdam-C. Included among the American collaborators are Professors Cheney, Brooklyn; Hocking, Alabama Polytechnic Institute; Kaufman, Butler; Youngken, Sr., Massachusetts; and Youngken, Jr., Washington.

The initial number of the journal contains a number of short articles in French, German, and English. In general these articles deal with current information on drug plants and plant principles. The journal is, therefore, of considerable interest to pharmacognists in particular and to pharmacists in general, because of the currentness of its data.

We have no periodical of precisely the same nature as *Acta Phytotherapeutica* and it therefore appears to have potentialities for filling a real need. It is to be hoped that subsequent numbers may include more detailed treatment of current botanical subjects.

R. A. Deno

College of Pharmacy
University of Michigan
Ann Arbor, Michigan

NEW HOSPITAL FORMULARIES

FORMULARY OF HACKENSACK HOSPITAL, Hackensack Hospital, Hackensack, N. J.

PHYSICIAN'S POCKET EDITION, HOSPITAL FORMULARY, St. Dominic - Jackson Memorial Hospital, Jackson, Miss.

FORMULARY, PHARMACY—HEALTH SERVICE, University of Michigan, Ann Arbor, Mich.

Misinformation About Hospital Pharmacy

The U. S. Food and Drug Administration has been quoted in several places as announcing that hospitals are not required to employ pharmacists.

Those concerned should note in the first place that the Federal Food and Drug Administration has no authority whatever to determine whether a hospital should or should not employ a registered pharmacist. This is a matter of hospital policy and state law.

Where a hospital is too small to operate a pharmacy under the supervision of a registered pharmacist, prescription service is supplied by arrangement with privately conducted pharmacies outside of the hospital, which operate in accordance with state pharmacy laws.

It is a well-known fact that hospitals which operate pharmacies must comply with the same regulations governing the practice of pharmacy in the state in which they are located as apply to other pharmacies in such states. It is a distinct disservice to the public, to hospital administration, and to American pharmacy, for anyone in a responsible position or conducting a responsible publication to mislead people into believing that hospital service for the American people has retrogressed to the point where pharmaceutical service can be given by anyone who is not qualified by education and by law to supply such service.

The plain facts are that any pharmacy located in a hospital which pretends to give adequate hospital service must be operated at all times under the supervision of a registered pharmacist. There are of course provisions for emergency service under the direct supervision of a physician as is the case in the practice of medicine generally.

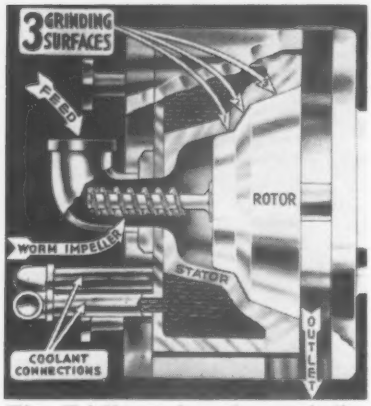
Those responsible for the misinformation inspired by such headlines as "Federal Law Does Not Require Hospitals to Hire Pharmacists" should correct it.

From: "Straight From Headquarters," by Robert P. Fischelis, *J. Am. Pharm. Assoc., Pract. Pharm. Ed. 15*:215 (Apr.) 1954.

Readers are encouraged to submit their production problems or describe unusual and unique equipment items which they have found useful

EQUIPMENT TOPICS

by PAUL F. PARKER AND CLIFTON LATIOLAIS



The Tri-Homo has three grinding surfaces for reducing particle size. The worm impeller which forces the material through the machine saves much personnel time.

HOMOGENIZER-DISPERSER

The manufacture of colloidal dispersions, suspensions, emulsions, ointments and creams generally involves the process of reducing particle size. When large amounts are manufactured, mechanized equipment is required such as mills, homogenizers, dispersers, etc., in order to make uniform, stable, and quality products. A piece of equipment which is versatile enough to mill, homogenize, emulsify, and disperse is a very sound investment.

The Tri-Homo Homogenizer-Disperser is particularly adaptable to hospital pharmacy manufacturing operations. The grinding action of this machine is based on a rotor and stator mechanism whereby the space between the two surfaces is adjustable to the thousandths of an inch. A worm impeller attached to the rotor acts to pull the material through. Coolant-heater connections are built around the stator so that the temperature of the unit can be regulated to meet particular manufacturing operations. Special rotors are available to meet varying requirements.

Suspensions

The preparations of collodial suspensions, dispersions, etc., with uniform stable properties can at times be rather difficult. The manufacture of magnesium hydroxide magma which will not settle is easily done by reconstituting magnesium hydroxide paste with distilled water in a mixer and then running it through the homogenizer-disperser at a setting of 1/1000th inch displacement.

Barium sulfate suspensions for roentgenographic visualization of either the small intestine or colon may be made in an aqueous media by the use of twenty to thirty percent barium sulfate in water. The product may be suspended with 0.65 percent medium viscosity sodium carboxymethylcellulose to make a well dispersed product provided it is homogenized thoroughly. To prepare, wet the sodium CMC with hot water until thoroughly suspended; add to a mixture of barium sulfate and water with constant stirring until well mixed. Pass through the homogenizer-disperser at 1/1000th inch displacement.

Emulsions

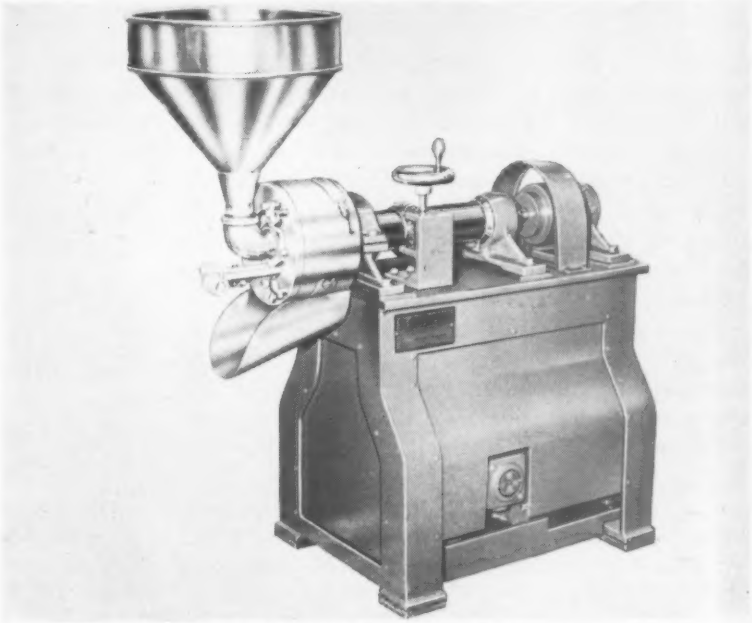
Either water-in-oil or oil-in-water type emulsions may be successfully prepared with a homogenizer-disperser. Hand lotions for hospital use may be inexpensively made by this method.

An interesting dust preventive compound may be prepared by emulsification which is useful for allergy patients to allay house dust. The product contains 87 percent heavy liquid petrolatum and 13 percent Triton NE. The latter is a 33 percent aqueous solution of Triton X-100 available from Rohm and Haas, Philadelphia, Pa.

The finished product has an ointment-like consistency and is diluted with water for various uses.

Ointments

Ointments can be milled through the homogenizer-disperser at 40 to 50 degrees C. to produce products of fine texture and dependable

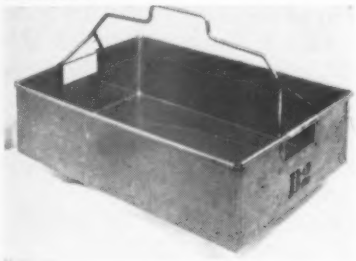


The laboratory model of the Tri-Homo Homogenizer-Disperser is recommended for a multiplicity of hospital pharmacy manufacturing operations.

smoothness. This method is frequently more desirable than the commonly used paint mill since all the contact parts are of stainless steel and substances corrosive to metal can more satisfactorily be made by this method. An added advantage is that of prepackaging ointments directly from the mill into various size ointment jars. The milling operation may be completed in an amazingly short time.

A compact laboratory model Tri-Homo homogenizer-disperser (14" x18"x24") is available in stainless steel. This model has a rated capacity of from five to twenty-five gallons per hour. The cost is $875 and is manufactured by the Tri-Homo Corporation, 100 Highland Avenue, Salem, Mass. The easy to clean design of this homogenizer is an economical time saver.

STAINLESS STEEL WARD BASKETS

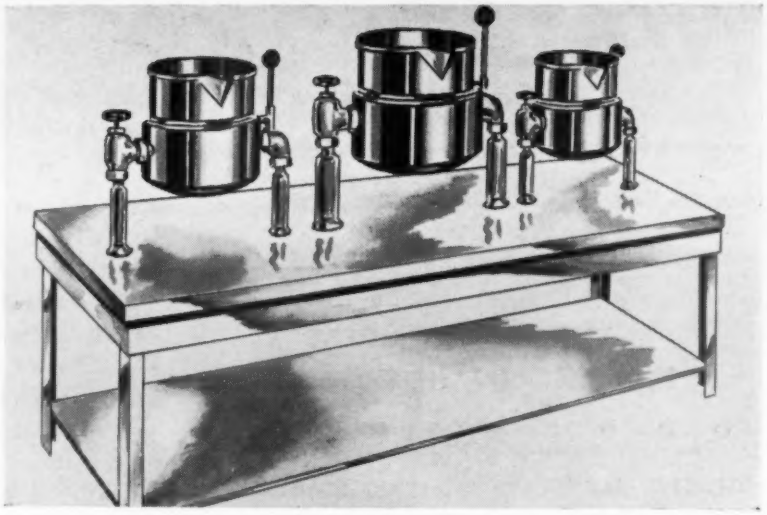


A durable, clean and easy to h dle ward basket may be made f a standard restaurant type di by adding a handle. The ba d- lustrated above measures 18x ches and the wing braces kee at balanced for handling even when the basket contains full gallon jugs. The special basket was designed and made by the R. W. Westerfield Company, 747 North Paulina, Chicago, Illinois.

STEAM JACKETED KETTLES

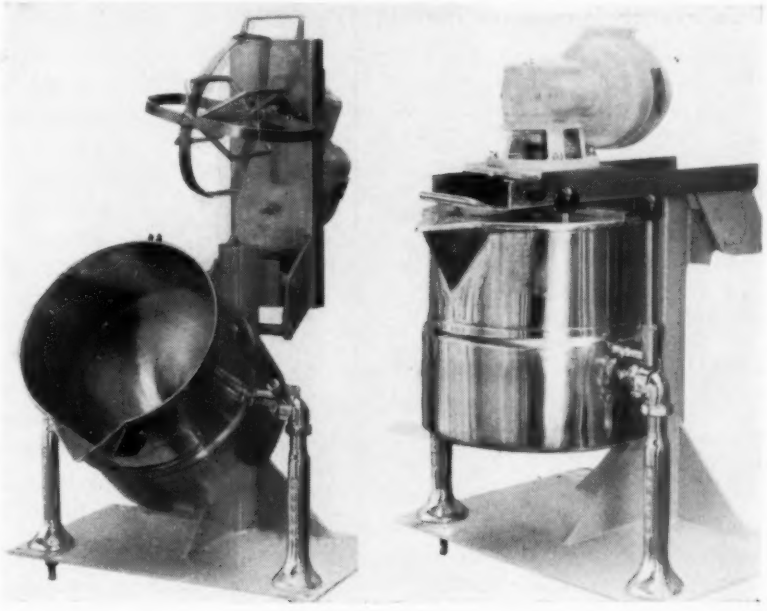
The hospital pharmacy can scarcely be without some form of steam jacketed kettle. The illustrations show a variety to meet the various most common needs. The small two quart model is frequently used for melting the waxes. A four quart model, with or without a mixer, is a convenient size for making larger quantities of ointments. The models shown are two-thirds jacketed, tilting type in stainless steel. When mounted on a stainless steel or marble surface there is a minimum amount of work required for cleaning.

There are few complications in specifications and use of the simple tilting kettles, however, the type with the agitator attached present several problems if they are to be used to the full advantage of their versatility. The type of a agitator must be selected to give the most thorough mixing action for material concerned. We have found type two paddle suitable for all around work. The speed of rotation of the agitator is also important and for maximum versatility we believe it would pay in the long run to have a variable speed. Consideration also should be given to the cover and preferably obtain one which is self sealing to prevent overflow or splash.



ABOVE: *Three steam-jacketed kettles may be mounted in series to meet various needs.*

BELOW: *Two views of a forty-quart steam-jacketed tilting kettle with agitator attached. The agitator and motor are counter balanced for ease in tilting from the kettle.*



Frequently the types of operations for which this equipment is suitable are accomplished with a kitchen type food mixer. If you have such a mixer of suitable capacity we would doubt the necessity for obtaining a steam jacketed kettle with mixer attached, because they are fairly expensive, however, if the equipment for the entire operation must be purchased, then this item will be found useful for many operations. These steam jacketed kettles, both with and without agitators are available from the Groen Manufacturing Company, 4539 West Armitage Avenue, Chicago 39, Illinois.

Notes and Suggestions

PRACTICAL FORMULAS FOR USE IN HOSPITALS

ISOPROPYL ALCOHOL STERILIZING SOLUTION

Catgut Storage Solution

Isopropyl alcohol	70.0 Gm.
Formaldehyde solution	2.5 cc.
Sodium bicarbonate	0.1 Gm.
Sodium nitrite	0.1 Gm.
Distilled water, to make	100.0 Gm.

This solution is used for the storage of tubes of catgut prior to use. The tubes sink in this solution and the sterility of the exterior of the tubes is retained. The effectiveness of the solution may be lost if exposed to evaporation; thus the solution so exposed should be replaced at regular intervals. This formula appears in the *Formulary* of the New York Hospital.

The following items have been submitted by E. J. Martin, Chief Pharmacist, St. Johns Hospital, Springfield, Missouri.

AROMATIC SYRUP AMMONIUM CHLORIDE

An aromatic syrup of ammonium chloride, prepared by Sorg and Kuever, *J. Am. Pharm. Assoc., Pract. Pharm. Ed.* 3:262 (1942), especially for use in Furstenberg's treatment of Meniere's disease, adapts itself exceedingly well for hospital administration of ammonium chloride. It is economical and pleasant tasting. Each 5 cc. of the syrup contains 1 gram of ammonium chloride.

Ammonium Chloride	200 Gm.
Saccharin, Soluble	10 Gm.
Menthol	1 Gm.
Alcohol	30 cc.
Glycerin	100 cc.
Comp. Syrup Sarsaparilla	400 cc.
Distilled Water, to make	1,000 cc.

LANOLIN IN LIQUID PETROLATUM 10%

Anhydrous Lanolin	100 Gm.
Oil of Rose, sufficient for odor	
Mineral Oil, Heavy, to make	1,000 cc.

Heat lanolin to a liquid and add mineral oil with constant stirring. Incorporate the oil of rose.

This preparation is used extensively by our Physiotherapy Department.

STABLE WHITE LOTION

Many of the current hospital formularies suggest that portions of Lotio Alba in excess of 90 cc. usually will have deteriorated before using. Superior therapeutic results may be obtained by dispensing the ingredients of the lotion in two separate bottles and having the patient mix the lotion (one teaspoonful of each solution) just prior to use. Alternatively the patient may be instructed to apply solution number 1 to the skin at bedtime and follow with solution 2, washing off the residue the next morning. (Sig: Apply Solution #1 to skin and follow with #2. Wash off the next morning.)

No. 1	
Sulfurated Potash	9.6 Gm.
Distilled Water, to make	120.0 cc.
No. 2	
Zinc Sulfate	9.6 Gm.
Distilled Water, to make	120.0 cc.

Both solutions may be made prior to use. The sulfurated potash solution must be stored in the refrigerator while the zinc sulfate solution may be stored at room temperature.

ACID-PROOF WOOD FINISH

Our new wood table tops have been given an ebony-black, resistant surface by applying the following solutions:

Solution 1	
Copper Sulfate	125 Gm.
Potassium Chlorate (or Permanganate)	125 Gm.
Water, to make	1,000 cc.
Solution 2	
Aniline Oil	120 cc.
Hydrochloric Acid Concentrated	180 cc.
Water, to make	1,000 cc.

Apply two coats of solution No. 1, hot, then two coats of solution No. 2, without heating, allowing each coat to dry thoroughly before the next is applied. When the last coat is dry remove the excess by rubbing with a coarse cloth. Finish by thoroughly rubbing with a mixture of equal parts of turpentine and linseed oil.

AUTOCLAVING TAPE

A new method for sealing and identifying autoclave bundles easier, faster, and more efficiently with pressure-sensitive tape is proving invaluable in hospital and clinical autoclaving procedure.

The method—designed to end the need for tying or pinning the bundles prior to autoclaving—calls for the use of short strips of a high temperature pressure-sensitive tape for the bundle-sealing job; a tape able to withstand autoclaving without drying out, curling, stretching or coming loose.

The new method was tested in actual use for four months in the central supply and operating rooms of 28 metropolitan and rural hospitals, and has since been adopted by 25 of the 28 test hospitals. In addition, a number of other hospitals have adopted the technique as word of the tests spreads.

The hospital tests showed that the tape—"Scotch" brand hospital autoclave tape No. 216, made by Minnesota Mining and Manufacturing Co., St. Paul—retains its active "hold" during prolonged exposure to high steam temperatures (up to 250°F.), yet removes easily from linens, jars, tubes, and canisters without leaving stains or gummy residue. It also holds pencil, ink or crayon identification markings that do not blot or fade into the tape's paper-type backing, nor into the linen bundle-wraps. Previously, most of the hospitals were identifying their tied and/or pinned bundles by writing on the linen—thus necessitating extra laundering and bleaching to remove the markings.

Further testing proved the new method to be aseptically positive, and as good or better than existing sealing methods. With the new method, all that is needed are short strips of the high temperature tape to effect the seal after the pack has been formed. On most packs a single 1-inch-wide by 3-inch-long strip is adequate, while two or more strips can be used to seal larger bundles. The tape's pressure-sensitive adhesive sticks at a touch to linens, metals, paper, glass, plastics, wood and other clean, dry surfaces—yet removes easily and cleanly without discoloring linens or leaving adhesive residue. Should a strip of the tape be left on the linen during laundering, it does not gum up or clog the laundry equipment.

Other advantages found for the new method include:

1. Reduction of time and labor costs: Packs can be wrapped and sealed in a fraction of the time required by other methods. One O.R. supervisor recorded an average pack-preparation saving 4½ cents per surgical procedure.
2. Neat, secure packs: Bundles sealed with the tape are more compact, require less storage space, and are easier to handle without danger of accidental opening.
3. Easy labeling: The tape serves as both a seal and label, and may be written on with any type pencil, ink or ball-point pen for clear, positive identification of the individual packs.
4. Convenient: Both the sealing and subsequent opening of the bundles is fast and easy.
5. Safe: The tape doesn't cut into the bundles, tear linens or injure personnel.
6. Inexpensive: One 60-yard roll of high temperature tape will seal approximately 720 bundles, at an average sealing cost of six bundles for one cent.

In addition, the tape can be used for labeling all types of trays, pans, jars, canisters and tubes; labels that can resist moisture after application, withstand repeated autoclaving, and remove easily without leaving adhesive residue on the surface of the labelled object. It can also be used to secure loose metal tray covers and the coverings for small tubes such as those containing hypodermic syringes to assure against contamination of the contents.

COURTESY MINNESOTA MINING AND MANUFACTURING CO.

LEFT: *Strips of surgical plaster (top) and No.* 216 *tape (bottom) were applied at the same time to this canister for thumb sponges prior to autoclaving. The canister had previously been cleaned and dried.* CENTER: *During a subsequent* 24*-day period of normal use the canister was re-autoclaved six times. At this point the surgical plaster showed signs of breaking down and coming loose. The No.* 216 *tape was not adversely affected.* RIGHT: *At the end of the test period, the surgical plaster left most of its adhesive on the canister when removed, presenting a difficult cleaning problem. The No.* 216 *tape deposited almost no adhesive.*

and Treasurer Sister Mary Edward

ASHP affiliates

Connecticut Society

New officers of the Connecticut Society elected to serve during the 1954-55 term are as follows: President Steve Tyrell, Bridgeport Hospital, Bridgeport; Vice-President Thelma Palmer, Danbury Hospital, Danbury; Treasurer Sister Maria Lucia, Hospital of Saint Raphael, New Haven; and Secretary Ruth Pully, Charlotte Hungerford Hospital, Torrington.

The Connecticut Society is making plans for the Institute which will be held at the University of Connecticut in June. Co-Chairmen are Mr. David Burack and Miss Ruth Pully.

Akron Area Society

Officers of the Akron Area Society for the 1954-1955 term are President Leon Bailey, Youngstown Hospital, Youngstown, Ohio; Vice-President William Derek, Union Hospital, Dover, Ohio; Secretary Theodore Mink, People's Hospital, Akron, Ohio; and Treasurer Sister Mary Margaret Mary, St. Joseph's Hospital, Warren, Ohio.

Michigan Society

Approximately ninety persons were present for the 1954 H.A.K. Whitney Lecture Award dinner sponsored by the Michigan Society. The dinner was held at Calvert Caterers in Detroit on April 8 with Mrs. Evlyn Gray Scott receiving the Award. Other guests included Mr. H.A.K. Whitney, in whose honor the Award was established, and Mrs. Whitney; Miss Jennie Banning from Saginaw, Mich.; and Mr. Russell Lovell, Mrs. Mary Morgan, and Mr. Wm. McElroy from Akron, Ohio. Dr. Don Francke presented greetings on behalf of the American Pharmaceutical Association and Miss Gloria Niemeyer represented the ASHP. Mrs. Jane Rogan, Detroit, presided over the meeting and Mr. George Phillips, President of the Michigan Society, presented the Award.

New Jersey Society

At a recent meeting of the New Jersey Society of Hospital Pharmacists plans were made for participation in the Catholic Hospital Association's Institute in Atlantic City, May 17, 18, and 19.

Mrs. Evelyn Carlin, Paterson General Hospital, Paterson, was reelected president of the Society. Other officers to serve during the coming year are Vice-President Anna C. Richards, Mountainside Hospital, Montclair; Secretary Sister Marion Flynn, St. Elizabeth Hospital, Elizabeth; and Treasurer Maurice D. Newman, Essex Mountain Sanatorium, Verona.

Houston Area Society

Projects considered by the Houston Area Society at the February 21 meeting include: (1) Method and practice for interchange of special formulations; (2) Establishment of a program for influencing physicians to use generic names; (3) Making availible information on common household poisons and antidotes; and (4) Establishing a means of keeping records on investigational drugs. A specific project for the Society will be selected at a future meeting.

During the social hour, Miss Jacqueline Claus spoke on her trip to the International Congress on Hospital Pharmacy held in Basle, Switzerland in September, 1952.

Greater St. Louis Association

Members of the Hospital Pharmacists' Association of Greater St. Louis met at St. Mary's Hospital on March 14. Meeting schedules were announced along with plans for future programs. Mr. Norman Hammelman who is teaching a course in hospital pharmacy at the St. Louis College of Pharmacy, reported on the progress and a recent field trip made by the students.

During the business session the group discussed the recent statement made by the FDA entitled "Federal Law Does Not Require Hospitals to Hire Pharmacists." It was agreed that further information and clarification should be obtained through the national organizations.

Midwest Association of Sister Pharmacists

Father Rotundi, Director of Hospitals for the Diocese of Joliet, was the principal speaker at the March meeting of the Midwest Association of Sister Pharmacists. He stressed the need for continual self-education on the part of hospital pharmacists. He also emphasized the fact that pharmacists must comply with the rules and regulations of the institutions they serve, as well as give the example of cooperation and respect for all other departments of the hospital.

A report of the Label Varnish Committee enabled each member to view and make her own selection from the samples presented as to what she considered the most effective label varnish.

Massachusetts Society

A meeting of the Massachusetts Society of Hospital Pharmacists was held on March 30, 1954 in conjunction with the New England Hospital Assembly at the Hotel Statler, Boston. At the business meeting, the following new officers were elected: President William Hassan, Peter Bent Brigham Hospital, Boston; Vice-President Edward Deeb, Veterans Administration Hospital, Rutland Heights, Mass.; Secretary Mrs. Margaret C. Shea, Norwood Hospital, Norwood, Mass.;

and Treasurer Sister Mary Edward, St. Vincent Hospital, Worcester, Mass.

Following the business meeting of the Massachusetts Society, the Ciba Pharmaceutical Company was host at a dinner attended by hospital pharmacists from Connecticut, Rhode Island, and Massachusetts. The speaker for the evening was Mr. J. Cooper, Director of Pharmacy Research, Ciba Pharmaceutical Products. His topic was "Hospital Pharmacists and Resarch."

Oklahoma Society

Mr. F. Royce Franzoni, President of the American Pharmaceutical Association, was the guest of honor at the annual luncheon meeting of the Oklahoma Society of Hospital Pharmacists. The meeting was held in conjunction with the Annual Convention of the Oklahoma State Pharmaceutical Association on April 22 in Oklahoma City. Mr. Franzoni spoke of the hospital pharmacists' role in the A.Ph.A. and the privilege of belonging to the national organizations. He elaborated on the services rendered through the Division of Hospital Phamacy and the efforts of the A.Ph.A. and the ASHP in making these possible.

At the March 17 meeting of the Oklahoma Society, a panel discussion on "Hospital Pharmacy Problems," highlighted the meeting. Participants included Sister Mary Andrew, SCL, a pharmacy graduate of Creighton University who is receiving her practical experience at St. Anthony Hospital in Oklahoma City: Dr. John B. Bruce, Professor at the College of Pharmacy, University of Oklahoma, Norman; Dr. Donald F. Robinson, Attending Physician of the Student Health Center, University Hosital, Oklahoma City; and Mr. William Cates, Pharmaceutical Representative of E. R. Squibb and Company, Tulsa. Mr. Frank Cotten, Representative of G. D. Searle and Company, Oklahoma City, moderated the panel. The meeting was held at St. Anthony Hospital in Oklahoma City.

Southeastern Society

The largest registration ever to attend an annual meeting was present for the Southeastern Society of Hospital Pharmacists' Convention held in conjunction with the Southeastern Hospital Conference, April 6 to 9 in Atlanta, Ga. Mrs. Oma Dell Pittman, Chief Pharmacist at Anniston Memorial Hospital, Anniston, Ala., was installed as president. Mr. Terry Nichols, Chief Pharmacist at the Veterans Administration Hospital, Birmingham, became secretary-treasurer.

Mrs. Oma Dell Pittman is installed as president of the Southeastern Society by Past-President Miss Johnnie Crotwell. Standing by is Mr. Terry Nichols, secretary-treasurer.

ASHP President Allen V. R. Beck of Indianapolis, together with Robert F. Whitaker, former director of Emory University Hospital, Emory, Ga., headed the group of speakers. Mr. Beck, speaking to an audience sprinkled with hospital administrators, "prescribed for" the hospital pharmacy. Mr. Whitaker, speaking on "Everyone in the Hospital Needs the Pharmacist," stated that the hospital is a potentially lethal weapon. He said that the pharmacist is one of the key persons who is capable of preventing this danger, and conversely, helping the hospital perform its real function of healing the sick and injured.

Other papers which claimed interest at the meeting were "Maintenance of Proper Ward Stocks," by Mrs. Clara Green of Augusta, Ga.; "Labeling and Storage Policies," by James Mitchener, Concord, N. C.; and "Night Watch on the Pharmacy," by Hal Sharpe of Greenwood, S. C.

Albert Lauve, Chief Pharmacist at Mercy Hospital in New Orleans, led a discussion period titled "What's Your Question?"

At the business session, the members voted to retain the semi-annual meeting, usually held in October. There had been a question of dropping this meeting in favor of the quarterly meetings of the several state societies.

Greater New York Chapter

The guest speaker for the March 16 meeting of the Greater New York Chapter of the ASHP was Rev. Joseph Tennant, a scripture scholar who acts as interpreter and secretary at the offices for the Propagation of the Faith. He spoke on "The Bible and Medicine." From the viewpoint of cause and effect, he discussed the relationship between illness and the remedies of the early Babylonians, Syrians and Jewish races.

During the business session, the group discussed the objective for the hospital pharmacy as set forth in the Proposed Point-Rating Plan and Sister Mary Jeanette presented the objective as outlined for her particular department.

The meeting was held at Saint Clare's Hospital, New York City.

Mississippi Society

The Mississippi Hospital Pharmacist is the name of the publication of the Mississippi Society, Volume I, Number 1 appearing in April, 1954. This first issue gives information about organization and objectives of the group, and names of charter members and officers, along with general information about the practice of hospital pharmacy. The objectives of the Mississippi Society, patterned after those of the national organization are outlined as follows:

"To promote, encourage, and improve, through organized effort, and by every legitimate means, *Hospital Pharmacy Practice* in the State of Mississippi.

"To improve the qualifications and usefulness of *Hospital Pharmacists* in the State of Mississippi.

"To assist in providing for the future an adequate supply of qualified *Hospital Pharmacists* for the State of Mississippi.

"To disseminate pharmaceutical knowledge by providing an interchange of information."

Plans have been announced for a July 14 meeting to be held at St. Dominic-Jackson Memorial Hospital, Jackson, at 7:30 P.M.

Arizona Society

The March meeting of the Arizona Society was held at the Good Samaritan Hospital in Phoenix. At this time plans were made for participation in the Annual Convention of the Arizona Pharmaceutical Association to be held on May 4. An invitation was extended to Dr. Donald Brodie of the University of California College of Pharmacy to speak on hospital pharmacy.

Plans were also discussed regarding a request to the Maricopa County Medical Society to participate in a panel on mutual problems of pharmacists and physicians.

During the program Mrs. Evelyn Timmons presented a report on the emergency treatment of T.E.P.P.

At the February 21 meeting held at the University of Arizona, the group set up the files for handling the forms requested from hospital pharmacists.

Northern California Society

The Northern California Society of Hospital Pharmacists met at Alameda General Hospital, Alameda, on March 9. During the business session, Mr. Chase Holaday, Chairman of the Legislative Committee, reported on the bill to "amend the Internal Revenue Code to permit the filling of oral prescriptions for certain narcotic drugs, and for other purposes," pointing out that the bill had been endorsed by the California State Pharmaceutical Association and the American Medical Association.

Plans for the two-day workshop to be held in San Francisco on July 17 and 18 were outlined by Mr. Jack Heard.

New members accepted in the Northern California Society include Myer Leo Albert, W. D. Brodovsky, Elda Holmquist, Helen Ondry, Eugene J. Meister, and Charles Wertz.

Meeting at the French Hospital in San Francisco on April 13, the group heard Dr. R. Roberts speak on "Newer Hypertensive Agents." Included also on the program was a 3D movie on Electrolyte Balance presented by Cutter Laboratory.

Utah Society

The Utah Society of Hospital Pharmacists is undertaking the task of uniform pricing of drugs used in their hospitals. In carrying this project out, a questionnaire has been sent to all members of the Society as well as hospital pharmacists in neighboring states.

Western Pennsylvania Society

The Western Pennsylvania Society of Hospital Pharmacists has recently completed a series of programs covering the following subjects:

"What the Hospital Administrator Expects of the Hospital Pharmacist."

"What the Head Nurse Expects of the Hospital Pharmacist."

"What the Detail Man Expects of the Hospital Pharmacist."

In each case an outstanding speaker presented the discussion and there was an opportunity for audience participation.

Northeastern New York Society

About sixty hospital pharmacists attended a dinner meeting of the Northeastern New York Society held at Hotel Ten Eyck, Albany, on March 20. The principal speaker was Mr. Irving Rubin, Managing Editor on Pharmacy, *American Druggist*.

Philadelphia Association

The Philadelphia Hospital Pharmacists' Association joined with the Philadelphia Chapter of the American College of Apothecaries for the March 23 meeting held at Jefferson Hospital. Highlighting the meeting were two panel discussions of interest to both hospital and retail pharmacists. With Mr. Herbert Flack as moderator, a panel representing the two specialties discussed "Available Prescription Pricing Schedules for the Pharmacist." This was followed by a panel on "Intra-Professional Relations and Problems of the Retail and Hospital Pharmacists." moderated by Mr. Robert Abrams, Secretary of the American College of Apothecaries. Those participating included Mrs. Jennie Libros, owner of Libros Apothecary, Philadelphia; Mr. James Merrick, owner of Merrick's Apothecary, Ardmore; Miss Marie Kavanagh, Misericordia Hospital, Philadelphia; Mr. Theodore Kaufmann, owner of Kaufmann's Apothecary, Philadelphia; Mr. Robert Cathcart, Director of Pharmacy, The Delaware Hospital, Wilmington, Del.; and Mr. Maurice Waite, owner of The Waite Apothecary, Philadelphia.

The April 20 meeting of the Philadelphia Hospital Pharmacists' Association was held in the Penn Sherwood Hotel. About thirty-five persons were present to enjoy a dinner and social hour sponsored by the Mead Johnson Company.

Mr. Benjamin Wexlar, President, called the meeting to order and announced that the May meeting would be held at The Delaware Hospital, Wilmington, Del. He then introduced Mr. Herbert Ashby, Philadelphia Area Manager for Mead Johnson, who in turn introduced Dr. W. D. Snively, Jr., speaker of

Meeting of Northeastern New York Society. Left to right: Mr. Irving Rubin, Managing Editor on Pharmacy, American Druggist; Mr. Benjamin Teplitsky, President of the Northeastern Society, Mrs. Teplitsky; and Mr. Vincent Striegel and Mr. Howard W. Bartlett, both of Wyeth Laboratories.

Ohio Society Honors Dean Edward Spease. Left to right: Colleen Phillips, Aultman Hospital, Canton; Sister (unidentified); William McElroy, Peoples Hospital, Akron; Dean Edward Spease; and Robert Stockhaus, University Hospitals, Cleveland.

the evening. Dr. Snively, Medical Director of the Mead Johnson Company, spoke on "Water Balance," covering the causes, symptoms, and means of treating unbalance. His talk was illustrated with slides.

Ohio Society

The Ohio Society of Hospital Pharmacists met Monday, Tuesday, and Wednesday, March 29, 30 and 31, 1954, in conjunction with the annual convention of the Ohio Hospital Association, at the Hotel Cleveland, Cleveland, Ohio. The members of the Society participated in the "Cleveland Night" buffet supper and party of the Association Monday night.

The Society met in business session Tuesday morning with Russ Lovell, President, presiding. The following officers were elected for the coming year: President-Elect Evlyn Gray Scott, St. Lukes Hospital, Cleveland; Vice-President Jeanne Sicafoose, Aultman Hospital, Canton; Secretary Sister Justine, St. Vincent's Charity Hospital, Cleveland; Treasurer Sister Mariel, St. Thomas Hospital, Akron. William McElroy, as incumbent President-Elect, succeeded to the office of president.

The Society voted to request the Ohio Hospital Association to sponsor a state institute for hospital pharmacists in lieu of the regular autumn meeting.

Speakers during the three-day program included Mrs. Ludel Sauvageot, Public Relations Director of Peoples Hospital, Akron; Thomas Sisk, St. Joseph's Hospital, Lorain; D. R. Zimmerman, E. R. Squibb and Sons; William Slabodnick, Massillon City Hospital, Massillon; R. V. Copland, Eli Lilly and Company; and Dr. Harvey M. Merker, Parke, Davis and Company.

Present also was Dean Edward Spease, a pioneer in hospital pharmacy and an honorary member of the ASHP. In his talk entitled "Review of Hospital Pharmacy," he told of early hospital pharmacy practice and the progress in recent years.

W. O. Rowland, President of the Ohio State Pharmaceutical Association, spoke concerning the work of the OSPA and assured the Society of his personal interest in securing representation for hospital pharmacy on the Ohio State Board of Pharmacy. Mr. Rowland also told the group that he believed that all hospitals in the state should have proper services of registered pharmacists.

Rochester Area Society

The Rochester Area Society of Hospital Pharmacists met on Monday, March 8 at the Rochester Town and Country Restaurant for a dinner meeting honoring Mr. Grover C. Bowles, Chief Pharmacist at Strong Memorial Hospital. He will go to Washington, D. C. to assume duties as Associate Director in charge of Para-Medical Services of the Memorial Hospital Association of Kentucky. Mr. Bowles is a charter member of the Rochester chapter and immediate past president of the ASHP.

Toledo Society

The Toledo Society of Hospital Pharmacists has scheduled two evening meetings in the yearly program to enable more pharmacists to participate. The first was held at St. Charles Hospital in April with a dinner preceding. Dr. J. Mehsen Joseph, Assistant Professor at the University of Toledo, spoke on "Biologicals." Following the meeting a tour of St. Charles Hospital was arranged by Mr. Alfred Campbell, Chief Pharmacist.

Texas Society

The Texas Society of Hospital Pharmacists held its annual meeting during the Seminar for Hospital Pharmacists at the University of Texas on March 20 and 21. Mr. Allen Beck, president of the ASHP, installed the following new officers of the Texas Society at the Sunday morning meeting: Graydon Payne, San Angelo, president; James D. McKinley, Jr., Houston, vice-president; and Susan Harkrider, Beaumont, secretary-treasurer. Mr. Payne appointed the following committees: *Program and Public Relations*—Adela Schneider of Houston, John McClure of Dallas, and Doris Smith of Austin; *Membership*—Jack McDaniel of Waco, Edwin Hibbs of Fort Worth, and Warren Smith of Abilene.

The Texas Society met for a special program on May 19 during the convention of the Texas Hospital Association at the Shamrock Hotel in Houston. The day's activities started with a breakfast, to which pharmacists brought their hospital administrators as guests, and ended in the afternoon with a tour through the pharmacies in the new hospitals in the Medical Center—Hermann, Methodist, M. D. Anderson, St. Luke's, and Children's. Members of the Houston Area Society served as hosts for the afternoon. Gammon Jarrell, Administrator of Southern Pacific Hospital, and William E. Woods, Director of Extension Service, University of Texas, were guest speakers at the breakfast.

One of the features of the program of the Sixth Annual Seminar for Hospital Pharmacists held in Austin last March was a report of the Survey and Census of Texas Hospital Pharmacists made by the Texas Society last year. Jack McDaniel, Chairman of the survey, reported that there were 138 hospital pharmacists in the state as of November 1, 1953, with 17 percent of these in Veterans Administration and Public Health Service hospitals. Army hospitals were not included in the survey.

as the president sees it

ALLEN V. R. BECK
Indiana University Medical Center, Indianapolis, Ind.

This time of the year is always a very busy one for those attending meetings. Actually if you were to try to attend everything having to do with hospitals there most probably would not be any time spent at home.

As your president, I have tried to visit as many of the affiliated chapters as possible. In the past two months I have been to ten meetings. The first was a chance to return to one of my favorite regions of the United States—Texas. The University of Texas School of Pharmacy in conjunction with the Extension Division scheduled an excellent Seminar under the able direction of Mr. William Woods. The program was excellent with presentation of a number of outstanding papers. Of course, there were many outside activities scheduled which were enjoyed by all.

Sunday evening a caravan was formed to drive to Houston to visit with the many hospital pharmacists in that area. Grover Bowles and I were quartered in the guest house at the University of Houston campus. Early Monday we were met by Dr. Ruth Kroeger who showed us around the campus and Pharmacy School. We met with the Student Branch of the A.Ph.A. and then adjourned to visit hospitals. By evening, after visiting seven hospitals, Grover and I were somewhat tired, but on to a dinner meeting of the Houston Society.

The following week I drove to Chicago to attend a meeting of the Midwest Sister Pharmacists at Saint Anthony's Hospital. This was a very interesting meeting and there was much discussion from the floor. This organization is working hard on the Point-Rating Plan, discussing one section at each meeting. Then they rate their own pharmacy on that particular section. This is an educational program and seems to be working very well.

The next meeting was that of the Southeastern Society in Atlanta. This proved to be a beautiful trip as Atlanta had blossomed out in all her beauty for the meeting. The dog-wood trees (pink and white), the tulips, and many other flowers were beautiful. The meetings were very good and several interesting papers were presented. The crowd was quite large and had a lot of enthusiasm for our facet of the profession.

A quick drive home and then over to Kansas City for the Midwest Hospital Association meeting. Those attending cover a large geographical area and there was a good turnout of hospital pharmacists.

The weekend was spent at home. Then a short drive to Chicago to a meeting which is, perhaps, one of the largest hospital meetings in the country—the Tri-State Hospital Assembly. Paul Parker, Chief Pharmacist at the University of Chicago Clinics, and Chairman of the Pharmacy Section, had scheduled two interesting panel discussions, Mrs. Jane Rogan, Chief Pharmacist at the Evangelical Deaconess Hospital in Detroit, was elected Chairman for next year with Leo Godley, Chief Pharmacist at Bronson Methodist Hospital in Kalamazoo, Mich., continuing as Secretary of the Pharmacy Section.

The most recent meeting I attended was the Catholic Hospital Association Convention in Atlantic City. There the hospital pharmacists from all over the United States met to discuss the many different phases of hospital pharmacy.

As many of you know, Thursday evening, May 20, was the "Grand Opening" of Bob Cathcart's new hospital pharmacy at The Delaware Hospital in Wilmington. This is indeed a well planned and well layed-out pharmacy. Bob and his administration deserve much credit.

You may be wondering why your president should take the time and spend the money to make all of these trips. There are several reasons. One of the most important reasons for this traveling is to visit our affiliated chapters and gather their opinions on many Society activities. This gives me a chance to better organize the program for the betterment of the SOCIETY. Oftentimes your administration may overlook the "grass root" approach to some problems.

It has been a pleasure to visit with all of you and believe me, I enjoyed the trips and hope that I was able to answer some of your questions.

NEWS

Workshop Planned

The Northern California Society of Hospital Pharmacists in cooperation with the Western Association of Hospitals will sponsor a two-day workshop in San Francisco on July 17 and 18. The meeting will be devoted to workshop sessions covering hospital organization, your responsibility as a department head, staff relations, human relationships in the hospital, and inventory and purchasing control. Mr. Jack Heard, University of California Hospital, San Francisco, is serving as chairman of the Committee.

ASHP Vice-President Speaks

Miss Adela Schneider, Vice-President of the ASHP and President of the Texas Society addressed the students at the University of Texas College of Pharmacy on April 1. She discussed hospital pharmacy as a branch of pharmaceutical practice and also told of the opportunities for women in the field.

Hospital Statistics

According to a release from the American Hospital Association, hospitals cared for 20,183,827 patients in 1953. Other significant statistics gathered by questionnaires sent to the 6,978 registered hospitals in the country are as follows:

In addition to the 20,100,000 patients, 3,100,000 babies were born in hospitals in 1953. The comparable 1952 figures were 19,600,000 patients and 3,000,000 newborn. In 1953, the AHA announced, United States hospitals spent $4,700,000,000 to care for these patients and newborn infants against a total expenditure of $4,400,000,000 in 1952.

The non-profit general hospitals which care for the great majority of the acute, short-term cases in the nation spent $21.09 every day for each patient. This compares with an average expenditure of only $2.83 per day for each patient in the mental hospitals. These mental hospitals account for 44 per cent of the nation's total of 1,580,654 hospital beds.

The patients in the non-profit general hospitals paid an average of $1.60 a day less in 1953 than it cost to care for them, an increase of 15 cents a day in the differential between patient income and expense the year before. Total income from patients of all hospitals in this classification in 1953 was $1,921,429,000 while expenses totalled $2,079,692,000.

The average patient stay in the short-term, general hospital was reduced again in 1953 as it has been in the past several years. The average stay in these hospitals in 1953 was 7.9 days, against 8.1 days in 1952.

Other facts released by the Association were:

One out of every eight persons in the United States will be a hospital patient in 1954, based on the 1953 records. Assets of all hospitals in 1953 totalled $10 billion.

Total 1953 payroll of all hospitals was $2,987,265,000 for 1,168,564 full-time employees.

On an average day in 1953, there were 1,341,623 patients and 43,528 newborn infants in U.S. hospitals.

Ninety five per cent of babies born in the United States in 1953 were born in hospitals.

More than 91,000,000 persons are now protected against illness and injury expense in voluntary hospital prepayment plans.

One of every 60 of the nation's workers are employed in hospitals.

Crosby Heads A.H.A.

Dr. Edwin L. Crosby has been appointed executive director of the American Hospital Association to succeed Mr. George Bugbee who resigned to become president of the Health Information Foundation in New York City. Dr. Crosby was formerly director of The Johns Hopkins Hospital in Baltimore and for the past year has been director of the Joint Commission on the Accreditation of Hospitals.

Charles T. Harrell Promoted

Charles T. Harrell of Atlanta, Ga. has been appointed Assistant Sales Manager for Bristol Laboratories. His office will be located at 630 Fifth Avenue, New York City where he will assist Mr. Paul T. Rees, Sales Manager of the Domestic Sales Division, Bristol Laboratories. Mr. Harrell is a member of the A.Ph.A. and the ASHP as well as the Southeastern Society in which he has played an active role.

Hansen Accepts New Position

Hans S. Hansen, formerly Director of Grant Hospital, Chicago, and a past chairman of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, has accepted the position as administrator of the Valley Children's Hospital and Guidance Clinic, Fresno, California. Mr. Hansen went to Grant Hospital as chief pharmacist in 1939 and eight years later was appointed executive director. He is a graduate of Northwestern University's course in hospital administration.

Mr. Hansen is well known to members of the ASHP having served as chairman during the 1946-1947 term. He has also participated the Institutes on Hospital Pharmacy, has contributed to the publications, and has served on Society committees.

Pharmacist on Board of Health

Mrs. Ethel Pierce, Chief Pharmacist at the South Shore Hospital, South Weymouth, Mass. and immediate past-president of the Massachusetts Society of Hospital Pharmacists, has been elected to the Board of Health in Abington, Mass. Mrs. Pierce has been active in the national association and attended the Pan-American Congress of Pharmacy in Lima, Peru in 1951.

Midwest Hospital Association—Pharmacy Section

Speaking at the Pharmacy Section of the Midwest Hospital Association's meeting in Kansas City, Kansas, April 29, Dean Ralph Clark of the University of Oklahoma College of Pharmacy outlined an eight point program for continued progress in hospital pharmacy. Suggestions included the following points:

"1. By the untiring efforts of the leaders among hospital pharmacists and an increased number of followers. Many hospital pharmacists, past and present, have supplied this badly needed leadership.

"2. By giving close attention to the important hospital pharmacy local and national meetings and institutes.

"3. By making continually better use of THE BULLETIN OF THE ASHP, and other literature in hospital pharmacy.

"4. By honest self-evaluation and self-improvement by hospital pharmacists and educators.

"5. By the development of continually better pharmaceutical education through the devotion and cooperation of some well-qualified leaders among hospital pharmacists and educators.

"6. By the combined thinking, discussion, and sustained enthusiasm of all of us, the present significant improvement in specialists in hospital pharmacy may well be only the beginning of an even brighter future for hospital pharmacy in the interests of the rapidly increasing number of patients being served in hospitals.

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"8. By developing a better understanding among all pharmacists. Here is another place in which a better understanding between educators, hospital pharmacists, and retail pharmacists (including members of Boards of Pharmacy) must be brought about through continuing discussions of the hospital pharmacy program as it goes forward."

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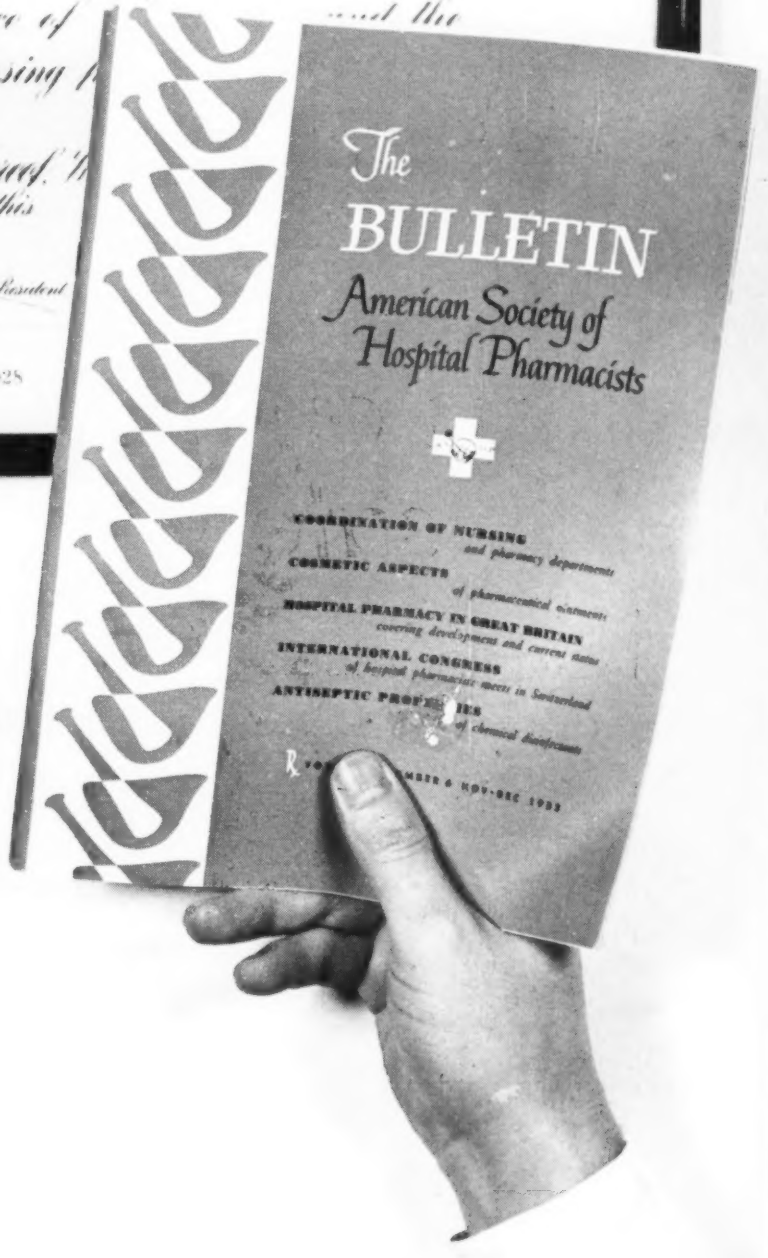

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VA Residency Program Expanded

The Veterans Administration has announced that the hospital pharmacy residency program, initiated two years ago at Los Angeles, will be continued this year with a new class of residents in one or more Veterans Administration Hospitals.

VA said if a sufficient number of qualified applicants indicate an interest in the course, several residents who qualify for admission to the graduate colleges of selected universities, will be named to the positions to be offered again this year.

The program requires a minimum of two years to complete, with approximately half of the time spent on duty in VA hospitals and the remainder in graduate studies at a university leading to the Master of Science degree in Pharmacy, with a major in hospital pharmacy.

Selection of residents will be by unassembled Civil Service examination. Announcements of the examination (pharmacy resident) are available in first and second class post offices.

Applicants should file a form 57 (application form) with the Executive Secretary, Central Board of U.S. Civil Service Examiners, Veterans Administration, Washington 25, D. C., not later than June 30, 1954, to be considered for the residency beginning on or about September 1, 1954.

Applicants must have a B.S. degree and must be currently registered as pharmacists. Undergraduates may apply before graduation, but must submit proof of graduation and registration before they can be appointed. Applicants also must satisfy the admission requirements of the graduate college of the university in which the academic work is to be taken.

Successful applicants will receive $2.02 an hour for the number of hours they are on duty at the VA center or hospital. They will be employed from 25 to 30 hours per week during the program. Residents will be required to pay tuition and other academic costs at the university.

The initial program was established in 1952 at Los Angeles on the recommendation of the Special Pharmacy Training Committee appointed by Vice Admiral Joel T. Boone (M.C. USN Retd.), VA Chief Medical Director.

The first class of four residents will be candidates this June for M.S. degree in Pharmacy with major in hospital pharmacy. Vernon O. Trygstad, Director of VA's Pharmacy Service, said the four graduates will remain with VA.

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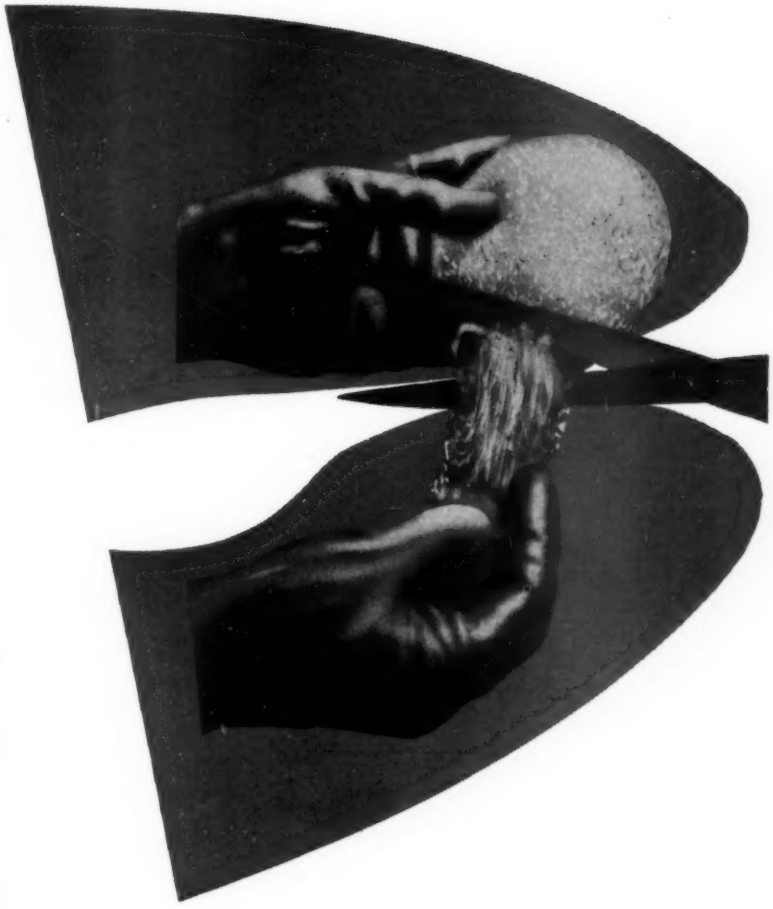

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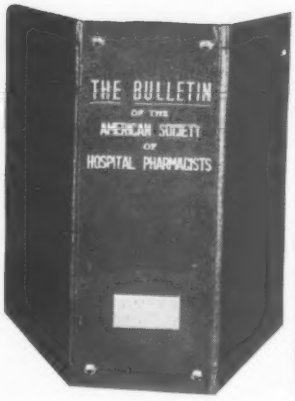

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